Public Utilities

Volume 61 No. 13 June 19, 1958

"IT ALWAYS GETS DARK AT NIGHT"
By Harold H. Young

« »

Tax Cost of Federal Electric Power
By Bennett L. Smith

« »

Lower Costs for PBX, More Traffic and Revenue
By James H. Collins

« »

A State Commissioner Reviews a Utility Case History

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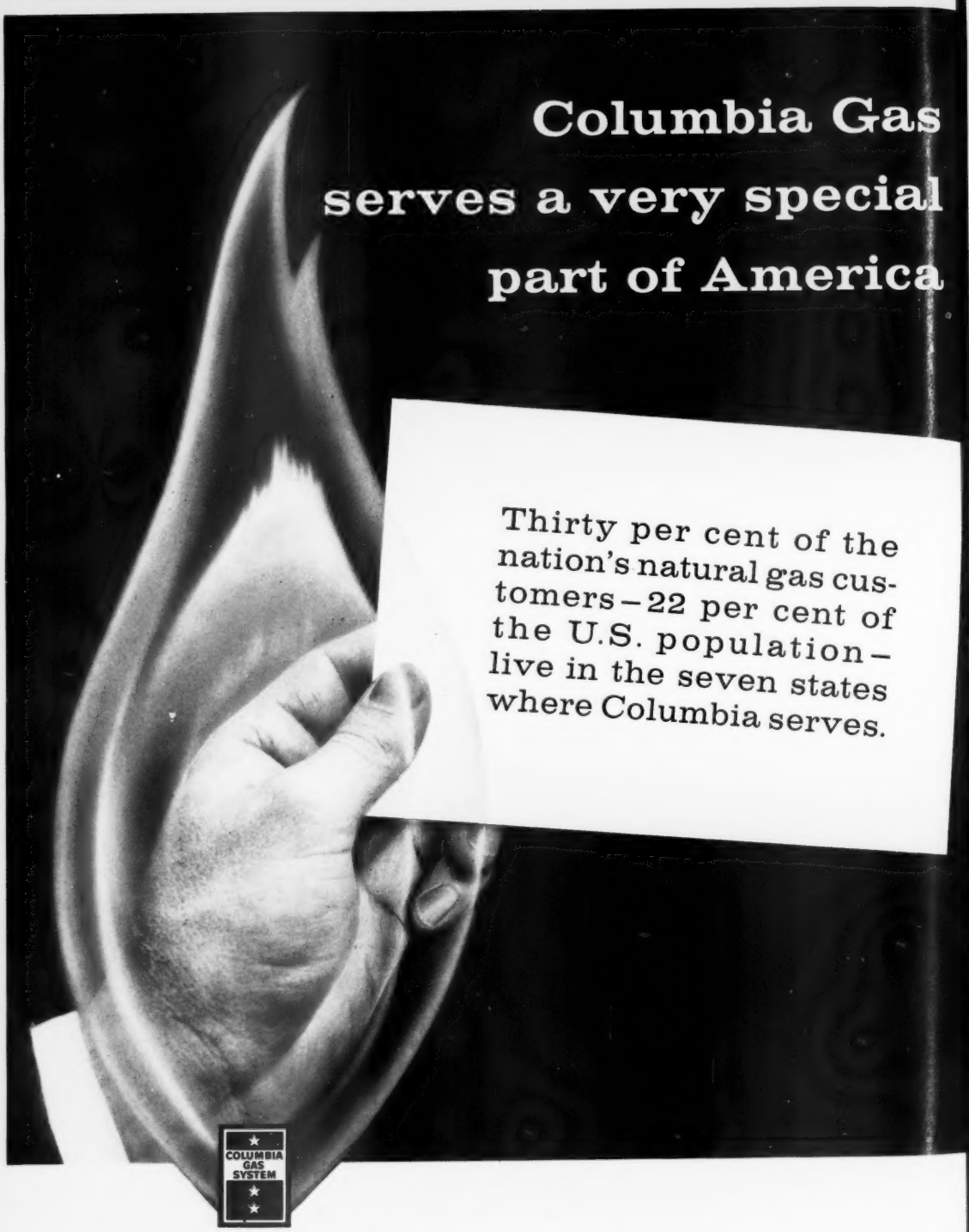
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Subscriptions: Address correspondence to PUBLIC UTILITIES FORTNIGHTLY, circulation department, 332 Pennsylvania Building, Washington 4, D. C. Allow one month for change of address.

Single copies $1.00. Annual subscription price (26 issues a year): United States and possessions, $15.00; Pan American countries, $15.00; Canada, $16.00; all other countries, $17.50.

Entered as second-class matter April 29, 1915, under the Act of March 3, 1879, at the Post Office at Baltimore, Md., December 31, 1936. Copyrighted, 1958, by Public Utilities Reports, Inc. Printed in U. S. A.

Public Utilities FORTNIGHTLY

VOLUME 61 JUNE 19, 1958 NUMBER 13

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Federally operated and allied electric projects bring annual tax loss to state and local taxpayers.

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PUBLIC UTILITIES REPORTS, INC., PUBLISHERS

Executive, Editorial & Advertising Offices . . . . . 332 PENNSYLVANIA BLDG., WASHINGTON 4, D. C.
Publication Office . . . . . CANDLER BUILDING, BALTIMORE 2, MD.
Advertising Representatives:
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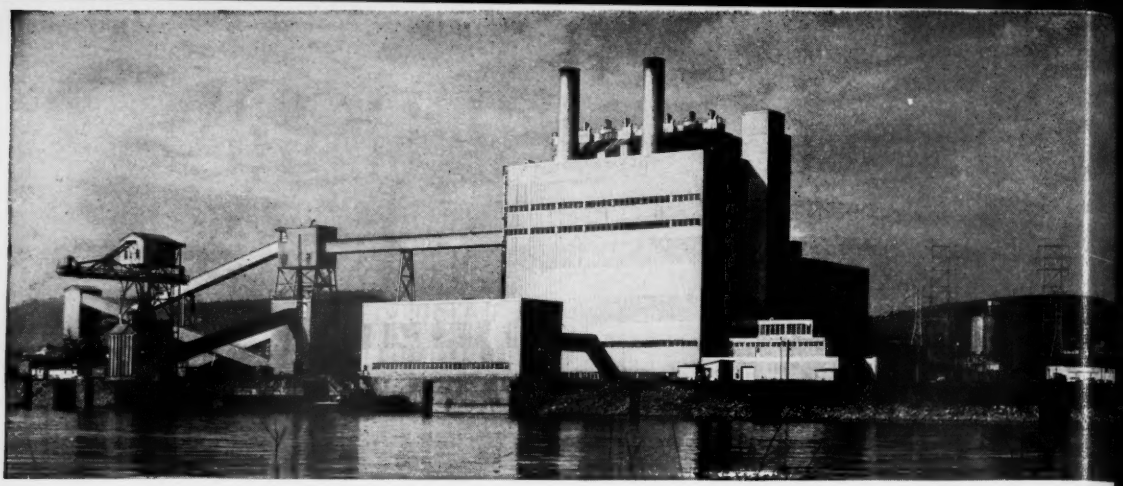

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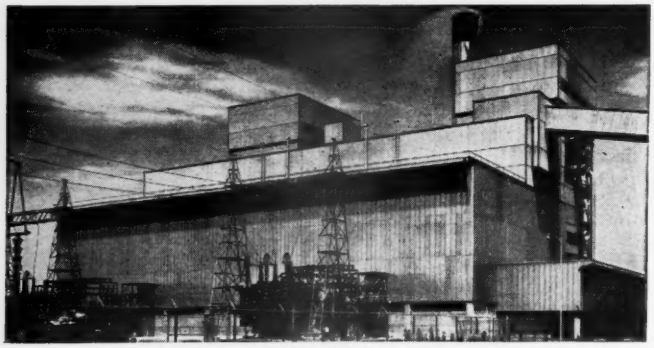

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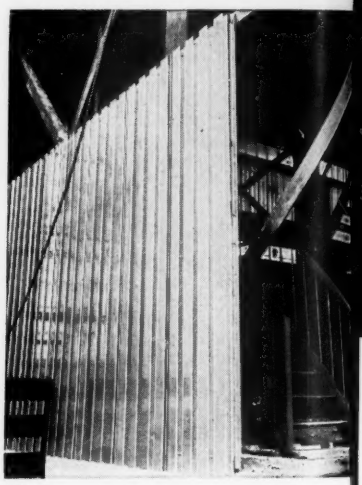

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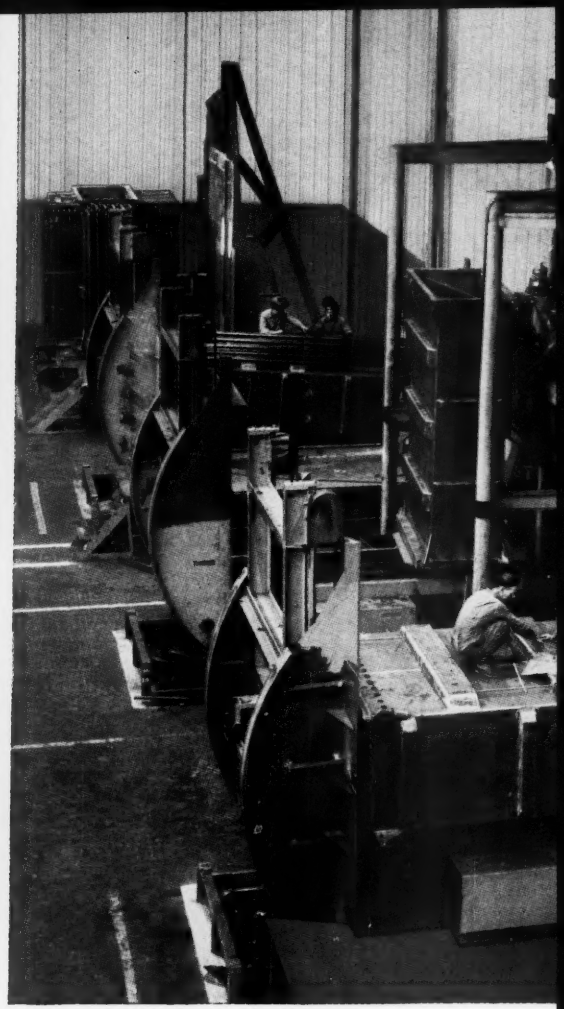

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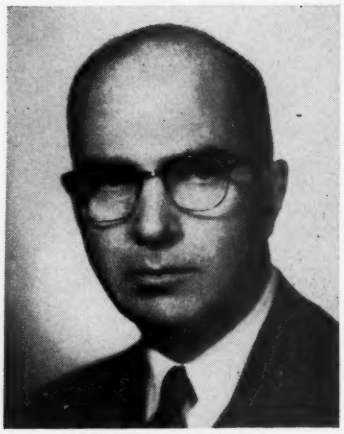
Pages with the Editors

ONE of the basic principles of Communism, according to Lenin, was the dogmatic assertion that Communism and Capitalism could never live side by side in peace. The fact is that the two major Communist countries today, Russia and China, represent one-fifth of the world's land surface and about one-third of the world's population, but only about one-eighth of the world's generating capacity and only a small fraction of the world's other available utility services, such as telephone, miles of railroad, gas pipeline, etc. By contrast, the United States, with only 6 per cent of the world's population, is reported to have 58 per cent of the world's telephones and about 40 per cent of the world's generating capacity, and much more than half of the other utility services mentioned above.

PERHAPS this comparison may explain the unwillingness of the Communist nations, despite their dogma of inevitable hostility with the capitalist nations, to go beyond the cold war stage. May it continue so. But the fact of improved Russian development seems to be preying on a lot of people's minds in the United States. To hear some of our own public figures and experts talk, one would think that the United States had actually fallen behind the Soviet Union in electric power production, for example.

AT a recent conference in Washington on water resources, sponsored by the Federal Bar Association, former FPC Chairman Olds extolled the Russian example of comprehensive basin development. At a recent speech in Eugene, Oregon, Senator Kennedy (Democrat, Massachusetts) said that while the Eisenhower administration is neglecting projects "in Oregon, the Russians move ahead." Kennedy went even farther and said that in recent years the Russians' rate of growth in power-generating capacity "has outstripped our own." He referred to four Soviet projects "now completed or under way which are each greater in capacity than the Grand Coulee dam." He predicted that by 1975 their total capacity would "far exceed our own."



HAROLD H. YOUNG

WHAT are the facts about world production of electricity? According to the 1958 edition of the statistical booklet issued annually by the Edison Electric Institute, the United States in 1956 had been responsible for 40.6 per cent of the world's production of electricity. This compared with 11.4 per cent for Russia. China's production was so small as to be given no special mention.

THE answer to the figures quoted by Senator Kennedy, of course, seems to lie in the misleading phrase "rate of growth." After World War II Russian power plants were largely in ruins, so that the "rate of growth" had to be very rapid if Russia was going to come back at all. It is not difficult to run up an impressive percentage figure on "rate of growth" when one starts virtually from scratch. This is not to minimize the great gains made by the Russians since the end of World War II, but even Russia's own goal with respect to American production

New Dodge Tradesman—a pick-up with side lockers.

Here's what a leading automotive magazine reports about fuel economy— in the 3 low-priced trucks

e best way to compare products is to *test* them oroughly. That's exactly what a leading auto- otive magazine's test drivers did with *all three* w-priced pick-up trucks. The results are revealed a recent issue. One important result was that the dge V-8, even with its extra power, gave better s mileage than the other two V-8's tested.

ere are some of the statements reported in this agazine about the Dodge *Power Giant* pick-up:

rst in economy! The magazine reports on over- gas mileage, "In spite of the lowest gear, 4.11, d the largest displacement engine, the Dodge oved to be the most miserly, averaging 13.5 mpg."

First in payload! The article says, "All test drivers agreed that the Dodge was the best equipped of the three when it came to carrying a good load."

First in power! The magazine states, ". . . the Dodge had quite a hill climbing advantage over the other trucks."

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DODGE *Power Giants*

is to achieve 50 per cent by 1960. And it is unlikely to do so, in spite of changing a five-year into a seven-year plan. The Russians had to lower their sights on account of industrial prices, but their production is good and their science and research excellent.

BY way of comparison, however, it might be noted that the United States was responsible for more than one-third of the increase in world electric production in 1956 as compared with 1955. And this was nearly two and one-half times the gain achieved by Russia. (Again the source is the Edison Electric Institute bulletin, which is in turn based on monthly statistics of the United Nations and other reliable publications.)

JUST why it is so fashionable at the present time for politicians and others to hail the achievements of the Russian Communist economy while belittling our own is a mystery. The Russians have plenty to hail about, including the various Sputniks, but they are getting plenty of help along other lines on this side of the water.

ONE of the reasons why the American electric utility industry has forged steadily ahead has been its constant stress on promotion. And this has been true not only in the large metropolitan areas and industrial centers, but even in the small towns. The leading article in this issue takes up an interesting phase of this. It deals with the rapid development of the utility business in small towns. It comes to us from a well-known financial writer, HAROLD H. YOUNG, partner of Eastman Dillon, Union Securities & Co. Born in New Hampshire, MR. YOUNG graduated from Brown University (MBA, '25) and entered the investment business in Providence, Rhode Island, the same year. He soon specialized in public utility financing, and came to New York to join Eastman, Dillon in 1945. He has been a partner since 1948, and is well known for his thoughtful and frequent writings and commentaries in the field of public utility economics and finance.

BENNETT L. SMITH

* * * *

THE article dealing with government plants, which begins on page 896, is written by BENNETT L. SMITH, a Fort Worth attorney, who is a native Texan, educated at the University of Texas (AB, '22; LLB, '26). MR. SMITH, who makes his home in Fort Worth, has been thirty years with the Community Public Service Company, of which he is principal attorney and secretary. He is also a part-time instructor in economics at the Texas Christian University. According to MR. SMITH, federal commercial and industrial enterprise involves a heavy loss to taxpayers.

FEDERALLY operated and allied electric projects brought in 1956-57 an annual tax loss of at least $134.4 million to federal taxpayers and $60.5 million to state and local taxpayers. The adverse effect of the tax loss is more serious because it is expanding at a time when federal government expenses at all levels are increasing and tax revenues are decreasing with a business recession. The tax loss by itself requires reversal of the policy which has increased federally operated and subsidized electric output from less than one per cent to over 20 per cent of the nation's total in twenty-five years.

THE next number of this magazine will be out July 3rd.

The Editors

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LOAD BUILDING FOR UTILITY EARNING OBJECTIVES

In bygone years, an electric utility company could generally rely on an increasing volume of sales to improve earnings. This was because the rising efficiency and other production economies made the per unit cost lower in all departments of operation as the volume of sales increased. But today the electric industry is confronted with a new situation. Efficiency potentials have diminished and possibilities for greater economies have vanished in the wake of the inflationary spiral of recent years. At today's prices for new construction, companies may have to absorb even a reversal of price **versus** cost patterns notwithstanding volume sales increases. Frederick W. Kimball, associate of Booz, Allen & Hamilton, management consultants, has made a careful analysis of what electric utility companies could do under present situations to build loads so as to achieve better earning performance. The article is fully illustrated with a number of interesting charts dealing with various appliances.

GOOD PRESS RELATIONS TECHNIQUES

For many years Robert Harsha Davidson, formerly press relations officer for the Chesapeake & Potomac Telephone Company of Washington, D. C., was known as one of the most effective exponents of good press relations for the telephone industry. In this article this veteran public relations expert gives some excellent suggestions which should be helpful to men in the public relations departments of all types of public utility companies. Despite the limiting suggestion of the title, the achievement of good press relations is more than a matter of mere technique, in this author's opinion. It is a matter of careful and constant cultivation, with a lot of give and take and mutual building of confidence between the working press and the utility company press department.

AREA PLANNING FOR LOW-COST POWER

Edward A. Fontaine, manager of the electric department of Stone & Webster Service Corporation, has written a most persuasive story about the need for pooling electric utility facilities under joint system operations. This is a question which is becoming more and more important to many companies. Indeed, the comparative performance of some companies in the years ahead may depend largely on what arrangements they can make now for sharing with others, or otherwise developing large-scale system operations. With the constant trend towards larger and larger plant generating capacities, the idea of "partnership" has long since passed beyond the realm of political argument. It is now very much a matter for concern among investor-owned companies and their relations to each other.

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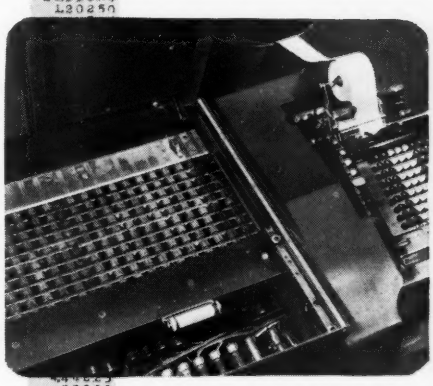

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Assistant Secretary of Commerce.

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J. BRACKEN LEE
Former governor of Utah.

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WILLIAM F. KNOWLAND
U. S. Senator from California.

"My practical knowledge of Washington leads me to the conclusion that nothing terminates in four years. And I have never seen the federal government contribute money without wanting to exercise control."

MATTHEW J. DOOLEY
Member, California Public Utilities Commission.

"When I use the phrase 'public interest' I must make myself clear. This phrase, in my opinion, connotes not only the ratepayers, but also the utilities serving the public. The interest of both, in my opinion, constitutes the public interest. No one having a modicum of intelligence could truthfully gainsay that the essential service provided by utilities renders their financial, plant, and service stability a necessary segment of the public interest."

CARLTON A. PEDERSON
Dean, Stanford University Graduate School of Business.

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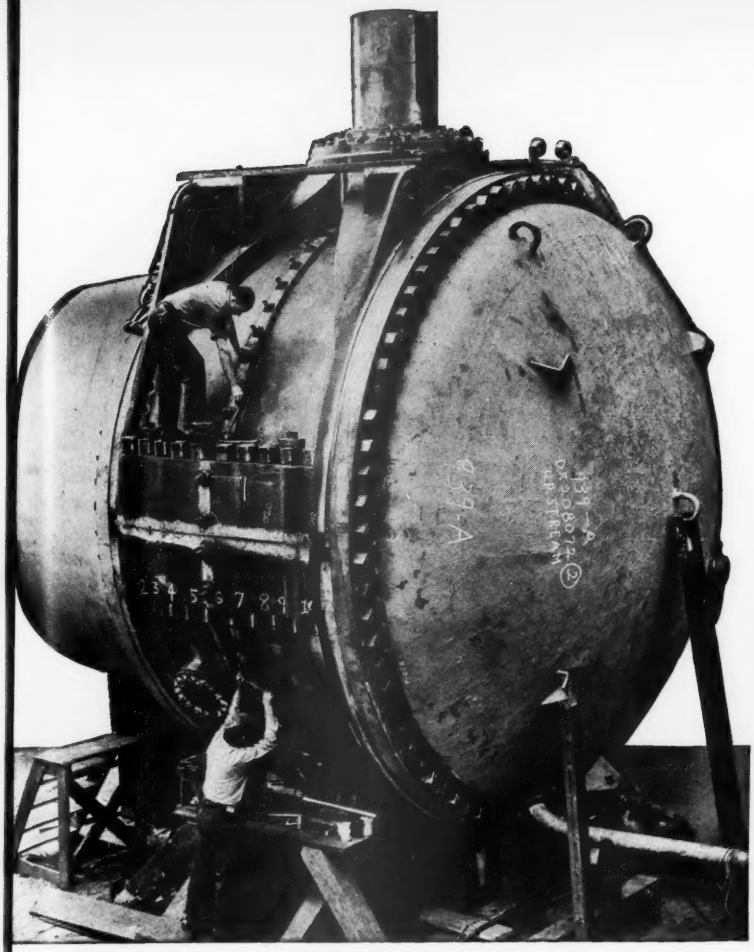

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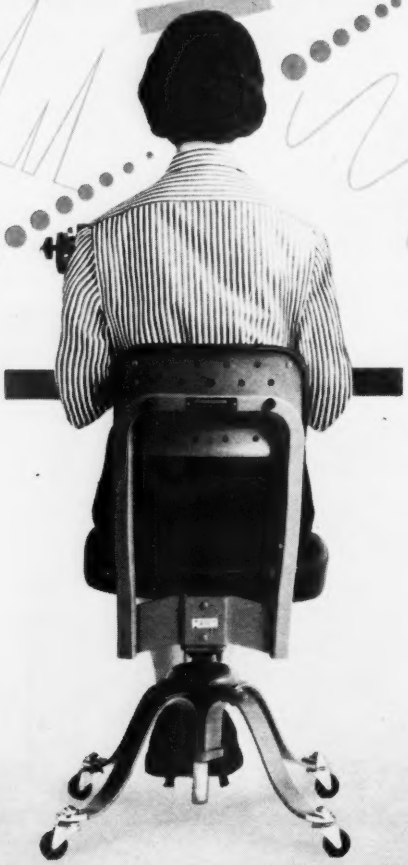

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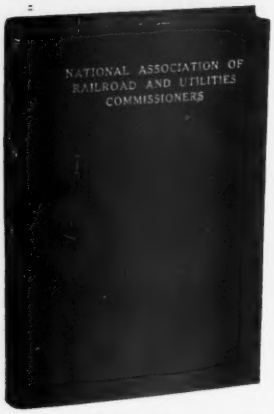

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UTILITIES
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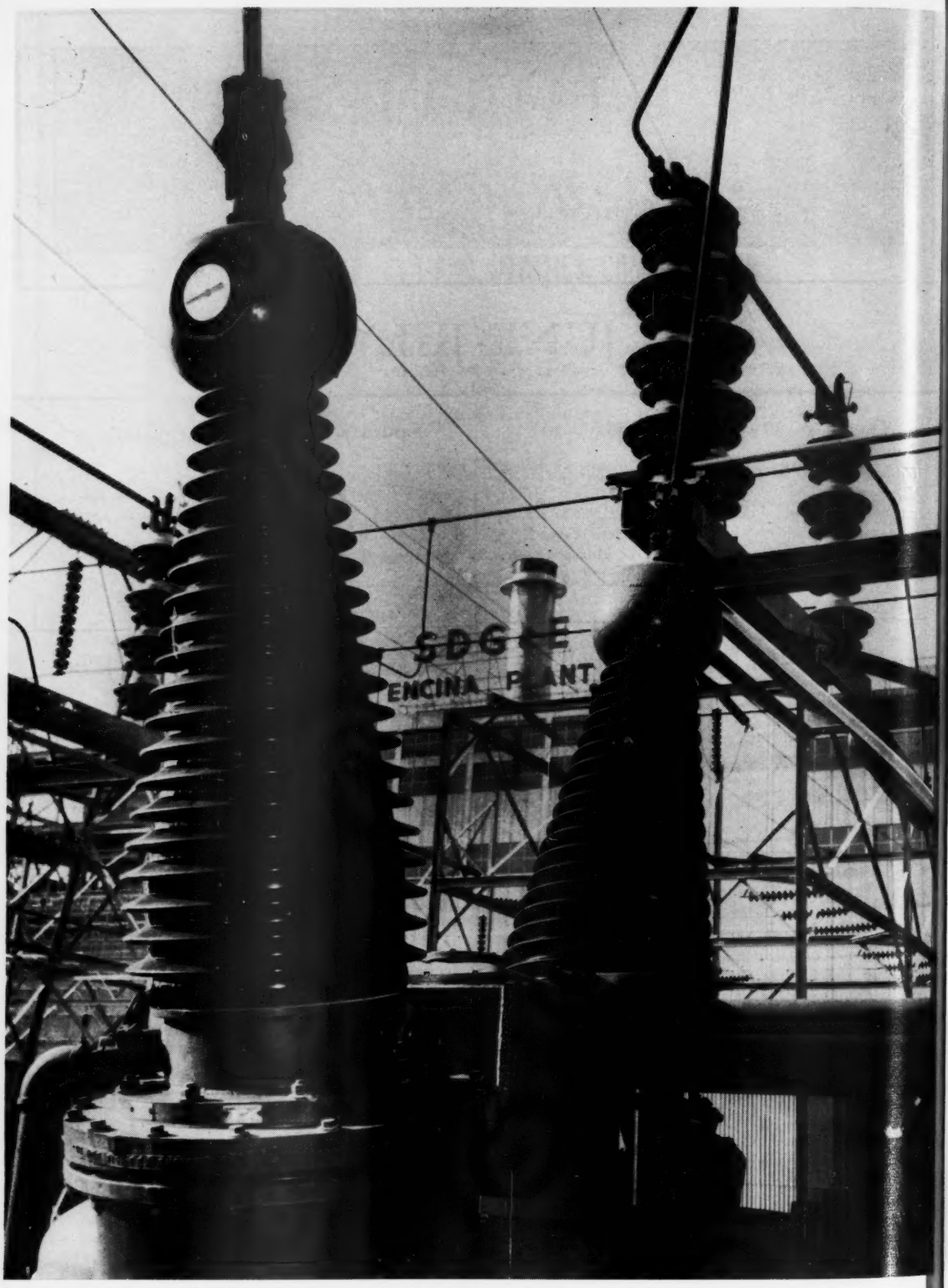
JUNE-JULY

Thursday—19 *Washington-Oregon Telephone associations begin annual convention, Portland, Ore.*	**Friday—20** *National Housewares and Home Appliance Manufacturers Exhibits will be held, Atlantic City, N. J. July 7-11.* ***Advance notice.***	**Saturday—21** *Maryland-District of Columbia Radio and Television Broadcasters Association ends 3-day meeting, Ocean City, Md.*	**Sunday—22** *American Society for Testing Materials begins annual meeting, Detroit, Mich.*
Monday—23 *Interstate Oil Compact Commission begins mid-year meeting, Salt Lake City, Utah.*	**Tuesday—24** *Canadian Gas Association begins annual meeting, Murray Bay, Quebec, Canada.*	**Wednesday—25** *American Water Works Association, Pennsylvania Section, begins annual meeting, Erie, Pa.*	**Thursday—26** *Association of American Railroads, Safety Section, ends 3-day annual meeting, St. Paul, Minn.*
Friday—27 *American Institute of Electrical Engineers ends 6-day summer general meeting, Buffalo, N. Y.*	**Saturday—28** *Colorado Farm Power Council will hold electric house-heating school, Fort Collins, Colo. July 10, 11.* ***Advance notice.***	**Sunday—29** *Western Summer Radio-Television and Appliance Market will hold western merchandise mart, San Francisco, Cal. July 21-25.* ***Advance notice.***	**Monday—30** *Southeastern Electric Exchange Public Utilities Executive Course will be held, Atlanta, Ga. Aug. 4-29.* ***Advance notice.***
JULY **Tuesday—1** *Alaska Telephone Convention will be held, Juneau, Alaska. Aug. 11-13.* ***Advance notice.***	**Wednesday—2** *Appalachian Gas Measurement Short Course will be held, University of West Virginia, Morgantown, W. Va. Aug. 25-27.* ***Advance notice.***	**Thursday—3** *International Conference on Peaceful Uses of Atomic Energy will be held, Geneva, Switzerland. Sept. 1-13.* ***Advance notice.***	**Friday—4** *Pacific Coast Gas Association will hold annual convention, Portland, Ore. Sept. 3-5.* ***Advance notice.***



Circuit-breaking Giants

Insulators on one phase of the 138-kilovolt circuit breaker at Encina power plant of San Diego Gas & Electric Company.

Public Utilities
FORTNIGHTLY

VOL. 61, NO. 13 JUNE 19, 1958

"It Always Gets Dark at Night"

It gets just as dark in the small towns at night and in the rural and suburban areas as it does in the very large cities. And with the steady exodus of our population to suburbia and exurbia, the business opportunities seem even more promising in the future for utility companies already serving there.

BY HAROLD H. YOUNG*

IT is not an oversight of the editor or compositor that the subject of my article appears in quotation marks. The point of departure in my discussion was the title of a booklet which came onto my desk somewhere around 1930. After Middle West Utilities Company got into financial difficulties there was a period in which National Electric Power Company functioned as the active top holding company in the Insull empire. Its tenure in this spot was brief because National Electric Power was, itself, soon in trouble. In the short time that company was in a place of prominence it released a promotional piece proclaiming on its cover that "It Always Gets Dark at Night."

This observation strikes one as neither profound nor startling. But at least it was attention-provoking and induced opening the cover to find an answer for the most obvious question which, in the vernacular,

*Partner, Eastman Dillon, Union Securities & Co. New York, New York. For additional personal note, see "Pages with the Editors."

was: "So what?" As a matter of fact the booklet had a rather interesting message. Many of the companies in the National Electric Power system provided electric service in medium-size and small communities and rural areas. It was obvious that the management had run into some difficulties in its attempts to get investor interest because of the size and type of communities served and because it was not tied in with metropolitan centers.

The theme of the booklet was that across the length and breadth of the country, whether in the big cities or in the villages and on the farms, it always got dark at night. That meant that the power companies, big or small, had a ready-made market for their product—electricity. In 1930 the average consumption per domestic customer was only 547 kilowatt-hours. Thinking back to that time I can almost count on the fingers of one hand the electric appliances we had in our home. In those days the electric companies still regarded lighting as the principal thing they had to offer for the home; hence, the emphasis on the recurrence of darkness at each eventide.

INTERESTINGLY enough, the problem which confronted National Electric Power more than a quarter of a century ago still has not been satisfactorily resolved by many a public utility company which operates in the modest-size communities.

If the list of cities in the service area does not contain one or more good-size cities which any sixth-grader could promptly locate on the map, there are many investors, professional as well as individual, who immediately set down a minus mark against that company. Some would even peremptorily dismiss it from any favorable consideration. I cannot help feeling that an injustice is being done to many a fine company and I am therefore prompted to carry on the battle started by National Electric Power so long ago. The difficulty is by no means confined to electric companies—the same burden is shared by the gas companies and the independent telephone companies which serve the smaller communities.

Since I was first employed in the investment business in 1925 my primary interest has been public utility stocks and for the last fifteen years I have given my full time and energies to this field. Believing that I can talk more intelligently and with more conviction about a company which I have visited, I undertook and am continuing a program of calling on as many utility companies as I can cover in a busy schedule. The latest count showed 217 companies visited, excluding a goodly sprinkling which, after my call, became parts of larger enterprises. A few of these companies are outside of the United States but more than 200 are in this country.

TO have racked up this record, it is obvious that I must have covered a generous number of companies not operating in big cities, and such is the case. I must say that I have developed a strong conviction that many a company faithfully serving its customers in modest-size communities is doing a job which entitles it to much better recognition in the financial community than it is getting. What I have to say is in no way intended to detract from the big-city companies and the standing they enjoy. The point is that they have investor following for which

some of their small cousins are still fighting.

Perhaps one difficulty is that investors, who are rightfully cautious with their hard-earned cash, tend to have greatest confidence in situations with which they are most familiar. Mention a large city which an investor recognizes quickly and his reaction is likely to be that the utility companies operating in that city must, perforce, do a good business. But tell the same investor about a company operating in a list of small communities which he recognizes only vaguely or not at all and he is likely to go on the defensive right away.

Why should he put his money in that company, he queries, when there are so many other companies operating in communities he knows well?

IF this objection came from only the small investor, the problem might be dismissed as not important. Unfortunately, however, there is in many instances a prejudice against companies in the smaller cities on the part of some of the institutional buyers, as well. One well-known rating agency, for example, is reputed to look with more favor on companies which can claim at least one big and well-known city in their service areas. This feeling is shared by many buyers behind the desks of the big banks and insurance companies.

WHAT arguments can be offered in favor of the companies in the smaller communities? The publicity man for National Electric Power thought he had one good point in the fact that "it always gets dark at night." Today there is much more than the matter of lighting to think about in connection with the service an electric company has to offer. The growth from the average domestic usage of 547 kilowatt-hours in 1930 to 3,174 last year has been due only in a small measure to more and better lighting. The giant strides have come from the use of a long, long list of appliances, many of which had hardly been thought of in 1930, much less popularized.

Today the electric companies provide an indispensable service which shows up in every corner of the household. No longer does a power failure mean merely the shift to stand-by kerosene lamps as it did when I was a small boy. Now it entails paralysis of a household. In many homes it means that heating, cooking, refrigeration, and many other necessary services are out.

¶ "A WELL-RUN *small company is likely to find less trouble of a political nature than the big-city companies. Utility employees in small communities are, more often than not, some of the best-known citizens and some of the most active in civic undertakings. To the customers in such a community, these men (and women) are* THE COMPANY. *They would not want to make any move in connection with such local matters as taxes and regulation which would be detrimental to their friends in the company. Contrast this with the impersonal relationships of the big city where utility employees are lost in the huge populace.*"

I contend that electricity is just as important to the continued comfort and security of a customer in a town of 3,000 people as it is in a city of 3 million. As a matter of fact, the service is probably more important to the family in the smaller town as these people are likely to occupy their own home and have more appliances and equipment than the family who lives in the restricted space of a city apartment. We cannot break down average usage figures altogether satisfactorily as between towns and cities to prove a point because so many things enter in—climatic conditions, presence or absence of gas competition, average purchasing power, and many other items. However, other factors being equal, it will be found that average domestic usage of a metropolitan company is very frequently lower, perhaps much lower, than that of a company which may not be too far away but tied in with smaller communities. The usage of some of these companies in the smaller communities is often conspicuously high. Demands of commercial and industrial customers have been going onward and upward in big cities and small towns alike.

PROMOTIONAL efforts in the smaller communities can often be more successful because of the greater ease of bringing the items promoted to the attention of the customers. Merchandising in the big cities must be through mass media — newspapers, radio, and the like. In the smaller communities many customers still pay utility bills over the counter at the company office, rather than through the mail, and whenever the customer comes to the office there is an opportunity to expose him to displays of appliances, some one of which may appeal to his fancy. One modest-size company I visited actually offered encouragement through commissions and bonuses to every employee—cashier, meter reader, lineman, or whatnot—for the sale of merchandise. Such a plan would not be feasible in many spots but it shows what can be done in smaller communities.

A well-run small company is likely to find less trouble of a political nature than the big-city companies. Utility employees in small communities are, more often than not, some of the best-known citizens and some of the most active in civic undertakings. To the customers in such a community, these men (and women) are *the company*. They would not want to make any move in connection with such local matters as taxes and regulation which would be detrimental to their friends in the company. Contrast this with the impersonal relationships of the big city where utility employees are lost in the huge populace. Even the names of key men are not known by the man in the street.

It is much easier to start agitation of a detrimental sort against a group of people who are perfect strangers than it is against people whom you know and see frequently.

IT is by no means safe to assume that a small-city company must worry along with an inferior quality of management. I hold in high regard many of the utility executives I have met in the smaller companies. Not infrequently a man may prefer to be a kingpin in a small company than to be further down the ranks in a big-city company. A lot of men like small-city living and enjoy themselves

Advantages of Small Company Stocks

"MANY buyers are very insistent on concentrating purchases of utility stocks in shares of companies located in parts of the country showing the fastest population growth. Agreeing that the element of growth is a desirable one, I raise the question as to whether this preference for 'growth area' stocks has not been carried to such an extreme that these shares now command an unwarranted premium. The spread in yields and price-earnings ratios against those of stocks of companies in less favored areas is getting so great that any advantages seem to be discounted some years ahead."

much more than they would in a big city —even with larger figures on their pay checks. Temperaments vary widely among utility executives as in any other group; many very able men just prefer to be identified with small cities and small enterprises. More than once I have known of a big company which wished to lure a competent small-company man into its employ but found the man just was not interested. In the smaller company an organization may be more closely knit and more effective, with intimate personal contacts possible between key personnel and rank-and-file employees.

Under conditions prevailing in the last few years, the small companies have often been in a position to show better growth trends than their big neighbors because of the tendency of industry to migrate to small communities where the labor supply is good (and tractable) and the working conditions satisfactory. Some enterprises with metropolitan bases are expanding through new plants in small communities rather than through enlargements of their existing plants.

POPULATION trends are also favoring suburban and rural areas as against

the large cities. Of course, some of the moves may not mean any change in the utility company serving a transplanted family if the company serves both the city and the satellites. Often, however, a move may carry a family beyond the service area of the city company or there may be an uprooting to an entirely different area as the family joins in the pattern of "getting out of the big city."

THIS discourse is not intended to promote the idea that every small-city company's securities are good investments and that the big-city company's are not. Far from it. However, I cannot help feeling that many small-city companies are unjustly suffering from prejudices, prejudices which would prove unwarranted if all the facts could be assembled.

Having used the word "prejudices," perhaps I may be pardoned if I extend my remarks just a bit further and plead that I feel there is another group of utility companies suffering in the financial market places from unjustified prejudices. These are some of the companies which were historically identified with weak holding companies. In many cases these companies formerly had in the hands of the public only their bonds and preferred stocks and, because of the poor financial health of both the companies and the holding company systems with which they were identified, these senior securities had inferior standing. They did not find their way into conservative portfolios.

WITH the turn of the wheel and, more especially, with the operation of the various provisions of the Public Utility Holding Company Act, these companies became independent enterprises, free from holding company affiliation, and their common shares came into the hands of the investing public. Before these companies were cut loose the Securities and Exchange Commission thoroughly overhauled their capital setups, if necessary, and put them on a sound basis. In many cases the changes in the financial structures were extensive. The companies are quite different enterprises today as against a decade or two ago. But many investors (a lot of them in the institutions) refuse to recognize the fact.

The question may well be raised: "Can a leopard change his spots?" In this instance the answer is very definitely affirmative. These companies are greatly altered enterprises. Physical rehabilitation has usually accompanied financial improvement. Some of the marginal holding companies were notorious for draining cash from their subsidiaries to service their own top-heavy capital structures. This often required the operating companies to curtail maintenance and defer property improvements. As independent enterprises they have been able to get and keep their plant in first-class shape.

Ironically, many investors, including more especially the older generation, think of these companies only as they knew them in years gone by and refuse to consider what has taken place more recently. I plead for buyers to be open-minded and to judge situations on their present merits.

IN passing, I might note that I have the continuing pleasure of being in contact with a significant number of buyers of United States utility stocks on the European side of the Atlantic. Among these

are investment trusts in England and Scotland having histories running far back of anything we have among similar enterprises in this country. Interestingly enough, I have often found these buyers abroad more receptive than many of our own people are, to taking advantage of bargains among shares of companies which were formerly less acceptable.

JUST one other type of prejudice I would mention relates to "growth areas." Many buyers are very insistent on concentrating purchases of utility stocks in shares of companies located in parts of the country showing the fastest population growth. Agreeing that the element of growth is a desirable one, I raise the question as to whether this preference for "growth area" stocks has not been carried to such an extreme that these shares now command an unwarranted premium. The spread in yields and price-earnings ratios against those of stocks of companies in less favored areas is getting so great that any advantages seem to be discounted some years ahead. Furthermore, the growth in utility business is vertical (per customer usage) as well as horizontal (customers served). A lot of companies showing consistent but not spectacular gains are not getting the attention they deserve. Remember, even in their service areas, "It always gets dark at night."

Faith in the Future

"I AM *trying to arrive at what I consider the basic principle. This is a loss economy as well as a profit economy, and if we are not equal to the task of accepting that type of thing—if we are going to run around and wring our hands the first time there are a few clouds in the sky and not look at our own business and our own judgment and question it—why, I think we are going to endanger a great many things that are important to us.*

"I for one have little or no faith—I won't say no faith, but very little faith—in the government, or the Federal Reserve System, which is a part of the government, or any other agency being smart enough or wise enough in their decisions to pick up the chips and prevent declines that have to occur from time to time because of mistakes of judgment.

"Now, I am not making any business forecasts; I am merely trying to talk in terms of the principles involved. I live in an environment where people come to me and one day they are on top of the world, and the next day they see disaster and collapse.

"Having been a trader on the floor of the Stock Exchange, I am used to it and I smile most of the time, but I know very well that grass isn't going to grow in the city streets in this country, and we have, in my judgment, more adjustability and more capacity and more intelligence in this American economy than we are given credit for, if we put it to the test. I have more faith in our economy and less faith in the magic of money policy or government policy than many of the people that discuss it from time to time."

—WILLIAM MCCHESNEY MARTIN, JR.,
Chairman of the board of governors,
Federal Reserve System.

Tax Cost of Federal Electric Power

Federally operated and allied electric projects brought in 1956-57 annual tax loss of at least $134.4 million to federal taxpayers and $60.5 million to state and local taxpayers. The adverse effect of the tax loss is more serious because it is expanding at a time when federal government expenses at all levels are increasing and tax revenues are decreasing with a business recession.

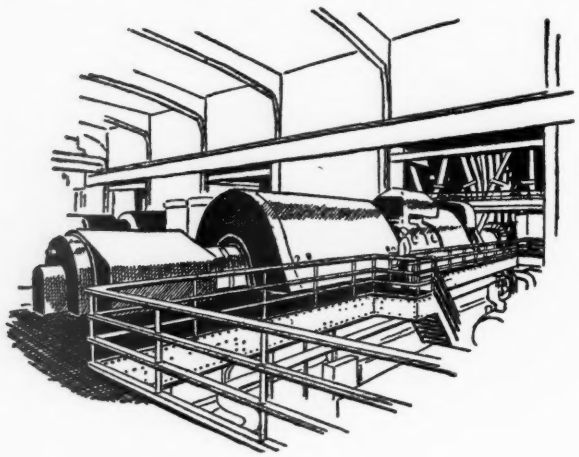
By BENNETT L. SMITH*

GOVERNMENT, through taxation, is the chief beneficiary of investor-owned electric utility companies.[1] The owners of these companies are lesser beneficiaries, both as to earnings per share and dividends actually received on capital stock. The owners in turn are subject to federal and state income taxes on dividends received. The result is double taxation of the owners for the benefit of general taxpayers.

The total tax bill of the investor-owned utilities in 1956, for example, was $1,761,000,000, but net income was less than $1,342,000,000, and dividends of $861 million to common stockholders were less than half of the tax toll.[2] The common stockholders paid federal income tax of at least 20 per cent or $173 million, which, added to the $1,074,000,000 paid by the power corporations, made a combined federal income tax contribution of $1,247,000,000 for the power companies and their common stockholders.

Government-owned and -operated electric power facilities, by contrast, burden the taxpayers with at least these costs: the tax funds invested and not returned, tax funds invested and returned without interest or with inadequate interest, annual

*Attorney, Fort Worth, Texas. For additional personal note, see "Pages with the Editors."



administrative costs, and loss of taxes which would be paid if the facilities were owned and operated by taxpayers.

Government vehicles for public power and tax costs to the taxpayers are considered in this discussion.

Government Vehicles for Public Power

THE federal government has two direct vehicles for producing, transporting, and marketing electric power: the administrative agency and the government corporation. The Department of the Interior and the Corps of Engineers are the chief administrative agencies in the electric field. The Interior Department is the administrative agency for marketing federal electricity, but it also generates and transports electric energy. The Corps of Engineers builds and operates power dams but is not a marketing agency. Tennessee Valley Authority is the leading government corporation in electric enterprise, and it generates, transports, and markets electricity.

The rural electric co-operatives, though not owned by government, are federally financed and burden taxpayers by subsidized interest and federal administrative aid and by loss of income tax revenues. These co-operatives are indirect but important federal electric agencies.

Administrative Agencies—Department Of the Interior

THE Department of Interior, a major branch of the federal government, is headed by a Cabinet officer, the Secretary of the Interior, who is appointed by the President and confirmed by the Senate. The Interior Department is thus an influential political agency. It is also a powerful economic force because it controls vast holdings of land and electric power and irrigation facilities in the western states. No single electric investor-owned utility company or group of such companies can hope to equal the Interior Department in wealth and political power.

The Reclamation Act of 1902 put the Department of Interior into water control and irrigation in eleven western states and ultimately into hydroelectric power. The department in fifty-six years has grown into a giant of tax-supported and tax-immune electric power. Hydroelectric power is regarded as an essential paying partner of reclamation.[3]

The Department of Interior is the marketing agency for all federal power except in the TVA empire. The department now has four electric marketing agencies: Bureau of Reclamation, Bonneville Power Administration, Southeastern Power Administration, and Southwestern Power Administration. The water and power development division of the department, under the direction of an Assistant Secretary of the Interior, supervises these four marketing agencies. Assistant Secretaries of the Interior are appointed by the President, and confirmed by the Senate.

The Commissioner of Reclamation is appointed by the President. Senate confirmation is not required by statute.[4]

BONNEVILLE POWER ADMINISTRATION was created pursuant to a 1937 act of Congress for the Bonneville dam. The Administrator is appointed by the Secretary of the Interior. That Cabinet officer has added other dams in the Pacific Northwest to the marketing functions of Bonneville Power Administration.

Southeastern Power Administration was created by the Secretary of the In-

terior in 1950 to carry out certain functions assigned to the Secretary by the Flood Control Act of 1944. SEPA transports and markets hydroelectric power produced at reservoir projects (ten in 1957) controlled by the Department of the Army in the states of Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia. The Administrator is appointed by the Secretary of the Interior.

The Southwestern Power Administration was created by the Secretary of the Interior in 1943 to carry out the Secretary's responsibility concerning electric energy at certain federal projects, including nine Army reservoirs in Arkansas, Oklahoma, and Texas. The Administrator is appointed by the Secretary of the Interior.

THE water and power development division of the Department of Interior also functions in hydroelectric fields outside the department's own systems by reviewing reports of the Corps of Engineers on flood control and navigation and applications to the Federal Power Commission for permits and licenses under the Federal Power Act. Thirty-one Corps reports and thirty-four applications to the Federal Power Commission were reviewed in the fiscal year ending June 30, 1956.[5]

The water and power development division is also responsible for national defense electric power. In this capacity the division assembles and evaluates data on productive capacity of electric utilities, serves as an allotting agency to the electric power industry for the power expansion program of the Atomic Energy Commission, recommends establishment or modification of expansion goals, and has other important responsibilities in the entire electric field. The economic and political power potential of the Interior Department with respect to defense electric energy alone is almost limitless, and covers the nation.

The Bureau of Reclamation has been confined to the West, but the water power and development division of Interior is national in scope.

Administrative Agencies—Corps of Engineers

THE Corps of Engineers is a division of the War Department, another

¶ "GOVERNMENT, *through taxation, is the chief beneficiary of investor-owned electric utility companies. The owners of these companies are lesser beneficiaries, both as to earnings per share and dividends actually received on capital stock. The owners in turn are subject to federal and state income taxes on dividends received. The result is double taxation of the owners for the benefit of general taxpayers. The total tax bill of the investor-owned utilities in 1956, for example, was $1,761,000,000, but net income was less than $1,342,000,000, and dividends of $861 million to common stockholders were less than half of the tax toll.*"

Cabinet-headed agency in the executive branch of the government. The Chief of Engineers, a Major General of the Army, is appointed by the President and confirmed by the Senate. This officer's duties are prescribed by the Secretary of the Army or by law.[6] From long connection with flood control and harbor and river development, the Corps passed naturally and inevitably into hydroelectric design, construction, and operation. The activity of the Corps of Engineers in hydroelectric fields has expanded with and covers the nation.

Government Corporations—Tennessee Valley Authority

A GOVERNMENT corporation is a "corporation" in name only, and bears little resemblance to a business corporation. There are reputedly 500 federal governmental corporations now in existence, most or all of which compete, directly or indirectly, with tax-paying private enterprise. The federal government is the sole owner or stockholder of these corporations.

Tennessee Valley Authority is a leading and typical example of a government corporation. The late President Roosevelt aptly described government corporations when he asked Congress in 1933 for TVA:

> . . . I, therefore, suggest to the Congress legislation to create a Tennessee Valley Authority—a corporation clothed with the power of government but possessed of the flexibility and initiative of a private enterprise.

A government corporation thus combines economic and political power. Mr. Roosevelt in 1937 asked Congress for seven regional authorities to blanket the nation and in 1944 recommended a Missouri Valley Authority. President Truman in 1949 suggested a Colorado Valley Authority.[7] A Pacific Northwest Authority is being urged in Congress.

GOVERNMENT corporations of the TVA type and size add government authority to economic power and are inherent threats to the nation's free business institutions and to the sovereignty of states. Partition of the nation into a few regional or river authorities would monopolize the economy, supersede the regulatory power of states by quasi-autonomous federal corporations, and materially alter our federal-state structure of government. Government corporations which operate commercial or industrial enterprises are potent instruments for achieving Socialism or state Capitalism. Congress has been aware of harmful innovations likely to result from more regional authorities and has refused to create additional ones.

Congress created TVA in 1933 and called it a corporation. The first directors of TVA became the incorporators. The chairman and the two other directors are appointed by the President, are confirmed by the Senate, and serve staggered terms of nine years each.

TVA dominates the generation and supply of electricity in Tennessee and in parts of Alabama, Georgia, Kentucky, Mississippi, North Carolina, and Virginia. Power generated by the authority in 1956 amounted to 57.5 billion kilowatt-hours, one-eighth of that generated by all power companies in the United States.

THE authority began and was sustained by the United States Supreme

Tax Discrimination

"EQUALITY and uniformity of taxation are fundamental principles of government. A fair return is necessary for voluntary private investors but not for involuntary taxpayer investors in government enterprise. Federal electric projects can charge rates 30 to 40 per cent lower than those charged by the power companies. The federal projects which are created and operated at the expense of taxpayers, carry a preference for nontaxpayers. All federal electric projects created in the last thirty years have been under a congressional mandate to prefer nontaxpayers (state and municipal agencies, public power districts, and co-operatives) over the tax-paying power companies."

Court under the guise of producing electricity incident to flood control and navigation. In the early 1950's the authority began emphasis on the construction of additional steam electric plants, ostensibly to meet increasing demands for electric power. Demand was increasing, of course, but tax-paying enterprises had no chance to enter TVA land. In 1954 for the first time TVA steam power generation exceeded hydro.[8] In 1956 TVA steam plants supplied 72 per cent of total system requirements.[9]

TVA is dissatisfied with recent appropriations by Congress for steam-generating plant expansion. The authority has used some of its own operating income for that purpose, but wants more money. It is seeking power to issue revenue bonds and to enlarge its steam plant and transmission system at will. Curtailment of

congressional restraint, if obtained, will to that extent augment the already enormous economic and political authority of TVA.

Government and Private Utility Enterprises—Some Ownership and Regulatory Comparisons

ALTHOUGH tax loss from government electric supply is the theme of this discussion, some comparison of federal electric projects and investor-owned companies as to ownership and regulation should be made.

Public power proponents' claim that "government facilities belong to the people" is false except in the special sense that, as taxpayers, they are involuntary investors in the government's electric and other commercial and industrial projects. Taxpayers can be and are assessed to support such projects, but these involuntary investors cannot buy or sell their interests or pass their alleged shares to heirs.

Business corporations, by contrast, are begun and sustained by voluntary investors who can buy or sell or devise their shares of ownership.

Free economy and freedom of investment go hand in hand. Government commercial enterprise reduces freedom of investment and destroys a free economy. Government in business is, from this standpoint, contrary to public interest in a nation of free capital.

Formation of investor-owned electric corporations by voluntary, tax-paying investors is regulated by state law. Issuance of their corporate securities is supervised by federal and state agencies. Rates, accounting practices, and service standards are strictly regulated by federal and state commissions and local authorities. Rates of return are limited to 7 per cent or less on original cost or fair value.

FEDERAL electric power agencies also regulate resale rates of investor-owned utilities to which the agencies sell electricity. Contracts between TVA or Bonneville Power Administration and power companies must by statute contain provision for federal agency supervision of resale rates charged by purchasing companies.[10]

Federal administrative bureaus and corporations, though government agencies themselves, are not subject to state and local regulation and are not so amenable to federal regulation as investor-owned utility corporations. The Department of the Interior, the Corps of Engineers, and TVA are absolutely beyond state and local jurisdiction. These federal agencies either belong to the executive branch of the government or are so mixed that neither the legislative nor the executive branch is entirely responsible for them. The Congress controls the purse strings of the federal agencies and corporations but in practice must follow agency and executive budgets. Personnel of the federal agencies and corporations is subject to little control by the Congress or the President.

The TVA is such an independent body that not even the President has power to construe for the three directors their legal duties.[11] TVA prescribes its own rates for electric energy. The people have small voice in the control and regulation of the federal electric projects operated in their name.

States can and do control the creation and admission of business corporations and can and do regulate the rates and

practices of utility corporations. The states as such are powerless with respect to commercial activities of federal agencies and corporations. No state or incorporated city can close the door of admission on a federal valley authority or administrative agency.

Government's Investment

THE enormity and acceleration of federal electric projects are impressive. Federal electric output has grown from less than one per cent of the nation's total in 1930 to 6.6 per cent in 1941 and to 17.3 per cent in 1957. Municipal, state, and power district electric systems produced 6.1 per cent and co-operatives 0.5 per cent, respectively, of the 1957 total. Power company production percentage decreased from 87.6 per cent to 76.1 per cent between 1941 and 1957. Federal generating capacity comprised 15.3 per cent of the nation's total in 1957 but was only 5.6 per cent in 1941. Power companies owned 85 per cent of total generating capacity in 1941 and 75.4 per cent in 1957.[12]

Federal electric power is growing faster than power company facilities.

The federal government alone has already invested billions of dollars in electric projects. The federal investment in electric plant completed and authorized will, by 1960, amount to about $10 billion.[13]

The $10 billion spent on federal electric projects could have been saved to the taxpayers if the investments had been left to private investors. Because of the inflationary spiral it is safe to assume that the federal projects could now be sold for more than original cost. The government's capital gain from the sale of these electric projects would benefit the taxpayers to that extent.

Federal money invested in power projects and not repaid at all or federal money actually invested and repaid without interest or with inadequate interest amounts to a subsidy and burdens the general taxpayer.

The $10 billion to be spent for federal power projects by 1960 could be and should have been saved the taxpayer.

Loss on Taxes

ALL government enterprises enjoy complete immunity from taxation. Every entry of government into business deprives municipal, local district, state, and federal

¶ *"FREE economy and freedom of investment go hand in hand. Government commercial enterprise reduces freedom of investment and destroys a free economy. Government in business is, from this standpoint, contrary to public interest in a nation of free capital. Formation of investor-owned electric corporations by voluntary, tax-paying investors is regulated by state law. Issuance of their corporate securities is supervised by federal and state agencies. Rates, accounting practices, and service standards are strictly regulated by federal and state commissions and local authorities. Rates of return are limited to 7 per cent or less on original cost or fair value."*

governments of taxes which would be paid if such project were owned and operated by taxpayers. This narrowing of the tax base penalizes the remaining taxpayers, and the penalty is aggravated by the tax revenues used to acquire and operate tax-exempt government enterprise.

The second Hoover Commission has stressed the enormity of federal, tax-exempt property. The federal government, for example, owns about one-fourth of all land in the United States.[14] The Hoover Commission found, as of December 31, 1954, within the Department of Defense alone, over $15 billion invested in more than 2,500 government facilities for commercial and industrial development.

Federal power projects have a limited and varied pattern of payments in lieu of taxes for state and local purposes. (They return no taxes at all to the federal government.) The Boulder Canyon project pays $600,000 annually to Arizona and Nevada. TVA pays 5 per cent of its electric gross revenue on an allocated basis to states and to local districts in which it operates. The Bonneville Power Administration, the Bureau of Reclamation, the Southeastern and the Southwestern Power administrations, the Missouri basin projects, and all the other electric facilities of the federal government retain their full tax immunity.

WHAT is the tax loss from government electricity? All taxes of the investor-owned electric utilities in 1956 averaged 23.4 per cent of their electric operating revenues for a total tax bill of $1.76 billion.[15] The power companies paid in 1956 federal taxes equal to $1,074,000,000 and 14.3 per cent of electric operating revenues. The state and local tax bill of investor-owned electric utilities for 1956 was $687 million and 9.1 per cent of electric operating revenues. The same percentage applied to the government's operating revenues would give a minimum estimate of taxes lost to local, state, and federal governments from public ownership.

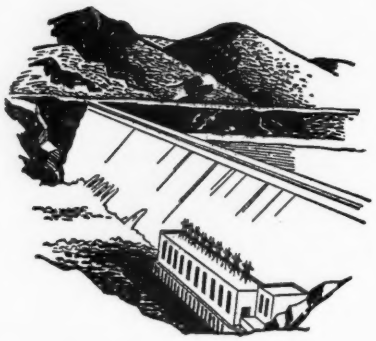
Gross operating revenue of federal electric projects for 1956 (fiscal year ending June 30, 1957, for Department of Interior) amounted to the following:

Bureau of Reclamation	$ 43,845,000
Bonneville Power Administration	64,762,000
Southeastern Power Administration	13,644,000
Southwestern Power Administration	8,772,000
Total Department of Interior	$131,023,000
Tennessee Valley Authority	221,642,000
Total federal	$352,665,000

In lieu of taxes for 1956 TVA paid $4,148,000 to state and local governments. As already noted, the amount of $600,000 was paid in the 1956-57 fiscal year to the states of Arizona and Nevada. The total direct federal contribution in lieu of state and local taxes aggregated $4,748,000. The federal projects, of course, paid no federal taxes at all.

IF the federal government's electric revenue had been received by investor-ownd electric utilities, an average of 23.4 per cent thereof would have been paid in taxes to federal, state, and local governments. Total taxes would have amounted to $82,523,610; federal taxes at 14.3 per cent to $50,431,100. If the federal enterprises had paid 9.1 per cent of gross revenue in state and local taxes (the percentage paid by the power companies), state and local governments would have been better off by $32,092,515.

Tennessee Valley Authority claims to



The Comparison of Tax Equivalents

"COMPUTING the tax bill for federal projects on the basis of electric revenue understates the tax equivalent in comparison with that of the power companies. Federal power rates recover costs which do not include federal taxes, do not usually include payments in lieu of state and local taxes, and do not include interest on the investment at the rates paid by business corporations. Federal electric rates would be increased by 30 to 40 per cent if based on values and methods prescribed for power companies by the Federal Power Commission."

share 5 per cent of revenues with state and local governments. The Hoover dam project, as stated, pays $600,000 annually to Arizona and Nevada. All other federal projects have never submitted to state and local tax payments.

TVA and Hoover dam payments are better than nothing, but let us compare them with the tax contributions of power companies to states and localities.

THE gross power revenue of TVA in 1956 amounted to $221.6 million. The authority's tax bill (computed at power company rates of 23.4 per cent for all taxes, 14.3 per cent for federal taxes, and 9.1 per cent for state and local taxes) would have been $51,854,000 for all taxes, $31,688,800 in federal taxes, and $20,165,600 for state and local taxes. The TVA tax contribution for 1956, limited to state and local governments, amounted instead to $4,148,000.[16]

TVA power is distributed in part by nearly 100 municipal agencies and about 50 co-operatives. Municipal agencies are normally not subject to any taxation, whether federal, state, or local. Co-operatives pay no federal tax. TVA municipal and co-operative distributors in 1956 grossed $152,827,000 and paid tax equivalents of $6,910,000.[17] At the power company rate of 23.4 per cent for all taxes,

the distributors would have paid $35,761,-520 in all taxes. The distributors at the power company rate of 14.3 per cent would have paid $21,854,260 in federal taxes. The distributors at the power company rate of 9.1 per cent would have paid $13,907,260 in state and local taxes.

TVA and its distributors had a combined gross electric revenue of $374,427,-000 for 1956 and paid taxes equal to $11,-058,000. At the power company rates of 23.4 per cent, 14.3 per cent, and 9.1 per cent, respectively, TVA and its distributors would in 1956 have paid a total tax bill of $87,615,920, federal taxes of $53,-543,060, and state and local taxes of $34,-072,860.

The tax loss for TVA operations is not limited to electricity. The authority sells fertilizer, forest, and other products and rents land. Revenues shared with states and localities in lieu of taxes, however, are confined to the electric enterprises of the authority and do not include receipts from other commercial and industrial activities.

THE four marketing agencies of the Department of the Interior had a gross electric revenue of $131,023,000 in the fiscal year ending June 30, 1957.[18] The only tax payments out of this revenue were the sums of $300,000 each paid to Arizona and Nevada. The Department of the Interior at power company rates of 23.4 per cent for total taxes, 14.3 per cent for federal taxes, and 9.1 per cent for state and local taxes, would have paid taxes as follows:

Total taxes	$30,659,380
Federal taxes	18,736,290
State and local taxes	11,923,090

The rural electric co-operatives are a phase of federal enterprise in the electric field because the co-operatives are immune to federal income taxes, receive a subsidized interest rate of 2 per cent on federal loans, and are the beneficiaries of administrative assistance by the federal Rural Electrification Administration. Federal loans to co-operative-type borrowers through 1956 aggregated about $3.25 billion.

THE co-operatives had combined operating revenues in the calendar year of 1956 amounting to $471,921,000 and a net margin or profit of $66,743,000. The nation's electric co-operatives in 1956 paid $13,111,000 in state and local taxes.[19] If the co-operatives had paid taxes at the power company rate of 23.4 per cent, the total co-operative tax bill would have been $110,429,510.

At the electric power company rate of 14.3 per cent for federal taxes, the co-operatives would have paid $67,484,700 to the federal government. At the power company rate of 9.1 per cent for state and local taxes the co-operatives would have paid $42,944,810 in state and local taxes, over three times as much as the amount actually paid. So federal, state, and local taxpayers are losing substantial sums from the tax exemptions and government subsidies enjoyed by the rural electric co-operatives.

Computing the tax bill for federal projects on the basis of electric revenue understates the tax equivalent in comparison with that of the power companies. Federal power rates recover costs which do not include federal taxes, do not usually include payments in lieu of state and local taxes, and do not include interest on the investment at the rates paid by business

corporations. Federal electric rates would be increased by 30 to 40 per cent if based on values and methods prescribed for power companies by the Federal Power Commission.[20]

PERCENTAGE of state and local tax to plant account suggests a basis of comparison between federal projects and power companies. State and local taxes in 1955 amounted to 1.8 per cent of electric plant investment of the nation's power companies. TVA, by comparison, in 1956 paid 0.26 per cent of completed plant in service in state and local tax equivalents, and all REA-type borrowers in the United States paid 0.56 per cent. If TVA and all co-operatives had paid state and local taxes of 1.8 per cent of investment in electric plant, their 1956 payments would have amounted to $28,592,355 instead of $4,-148,000, and $42,466,450 instead of $13,-111,060, respectively.

The power companies not only pay *ad valorem* state and local taxes but also pay income, gross receipts, corporate franchise, and other excise taxes to the states and localities in which they operate. These excise taxes are infrequently based on property values. The allocation of costs to power by TVA is controversial and is considered too low by many investigators. The plant account comparison is not, therefore, fully accurate, but is pertinent in assessing minimum state and local tax loss from federally operated and subsidized electric power projects.

THERE is no way of knowing the actual tax loss from federal ownership of commercial and industrial property, including electric projects. The Study Committee on Payments in Lieu of Taxes and Shared Revenues reported in 1955 that there were no inventories of federal properties. That committee found that general estimates placed theoretical state and local property taxes on all federal property at an amount between $200 and $300 million per year.[21] The Study Committee recommended a range of annual state and local payments in the neighborhood of $200-

		State and Local Tax Equivalents 23.4%	*Federal Tax Equivalents 14.3%*	*Total Tax Equivalents 9.1%*
1.	Department of Interior	$ 11,923,090	$ 18,736,290	$ 30,659,380
2.	Deduct amount paid	600,000	0	600,000
3.	Tax loss	$ 11,323,090	$ 18,736,290	$ 30,059,380
4.	TVA	$ 20,165,600	$ 31,688,800	$ 51,854,400
5.	Deduct amount paid	4,148,000	0	4,148,000
6.	Tax loss	$ 16,017,600	$ 31,688,800	$ 47,706,400
7.	Total direct federal tax loss, line 3 plus line 6	$ 27,340,690	$ 50,425,090	$ 77,765,780
8.	TVA municipal distributors	$ 10,501,600	$ 16,502,510	$ 27,004,110
9.	Amount paid	7,139,770	0	7,139,770
10.	Tax loss	$ 3,361,830	$ 16,502,510	$ 19,864,340
11.	Co-operatives	$ 42,944,810	$ 67,484,700	$110,429,510
12.	Deduct amount paid	13,111,000	0	13,111,000
13.	Tax loss	$ 29,833,810	$ 67,484,700	$ 97,318,510
14.	Total tax loss from federal, TVA municipal distributors, and all co-operatives, lines 3, 6, 10, and 13	$ 60,536,330	$134,412,300	$194,948,630

260 million for federal property holdings as of June 30, 1953.[22]

The Study Committee concluded that all commercial and industrial properties of the federal government, including electric facilities, should be subject to payments in lieu of property taxes to state and local governments. The committee limited its recommendations to state and local tax agencies and made no recommendations at all on payments in lieu of federal taxes.

The table on page 906 summarizes the tax payments and the minimum amounts which would have been paid in 1956 by federal electric and co-operative projects if they had been owned by taxpayers for the corresponding periods.

Tax Discrimination

EQUALITY and uniformity of taxation are fundamental principles of government. A fair return is necessary for voluntary private investors but not for involuntary taxpayer investors in government enterprise. Federal electric projects can charge rates 30 to 40 per cent lower than those charged by the power companies.[23]

The federal projects which are created and operated at the expense of taxpayers, carry a preference for nontaxpayers. All federal electric projects created in the last thirty years have been under a congressional mandate to prefer nontaxpayers (state and municipal agencies, public power districts, and co-operatives) over the tax-paying power companies. The preference clause is inherently discriminatory against the customers and owners of power companies and contrary to the equal and uniform application of law to all citizens. The preference clause is a paradox in political effect because taxing authorities use their political power to prefer, in a commercial enterprise, nontaxpayers over taxpayers.

ANOTHER discrimination results from sale of federal electricity to industries. Bonneville Power Administration in its nineteen years of existence has sold 54 per cent of its power to private industries at an average rate of 2.22 mills per kilowatt-hour.[24] TVA in 1956 sold 13.5 per cent of power output to private industries at an average rate of 3.85 mills per kilowatt-hour. The Columbia and the Tennessee valleys have an undeserved advantage in attracting industries for which electric rates are important. Federal electricity can be sold at rates 30 to 40 per cent cheaper than those of power companies.

Regional competition for industry is growing. Other regions may demand government electric projects to equalize industrial advantages. New York state is going into the electric power business on its own at Niagara, with the announced purpose of reducing power rates by tax savings.[25]

A power company cannot arbitrarily discriminate between localities, but government electric projects result in the kind of discrimination forbidden to a power company by government.

Conclusion

FEDERAL commercial and industrial enterprise involves a heavy tax loss to taxpayers. Federally operated and allied electric projects brought in 1956-57 annual tax loss of at least $134.4 million to federal taxpayers and $60.5 million to state and local taxpayers. The adverse ef-

fect of the tax loss is more serious because it is expanding at a time when federal government expenses at all levels are increasing and tax revenues are decreasing with a business recession. The tax loss by itself requires reversal of the policy which has increased federally operated and subsidized electric output from less than one per cent to over 20 per cent of the nation's total in twenty-five years.

Footnotes

[1] "Where Is the Giveaway?" by C. L. Cooke and Bennett L. Smith, PUBLIC UTILITIES FORTNIGHTLY, Vol. 58, No. 5, August 30, 1956, p. 289.
[2] Edison Electric Institute *Statistical Bulletin* for 1956, p. 57.
[3] Report of Department of the Interior for 1956, p. XXIII.
[4] 43 USCA 373a.
[5] Report of Department of the Interior for 1956, p. 5.
[6] 10 USCA 21f.
[7] *"Our Nation's Water Resources—Policies and Politics,"* by Ben Moreell, p. 86, The University of Chicago, 1956, Chicago, Illinois.
[8] Annual Report of TVA for 1954, p. 1.
[9] Annual Report of TVA for 1956, p. 3.
[10] 16 USCA 831k and 832d.
[11] *The President—Office and Powers,* by Edward S. Corwin, 3rd edition, pp. 112-114, New York University Press, 1948.
[12] *Electrical World,* Vol. 149, No. 4, January 27, 1958, p. 102.
[13] *"Our Nation's Water Resources—Policies and Politics,"* by Ben Moreell, p. 152, The University of Chicago, 1956, Chicago, Illinois.
[14] A Study Committee Report on *Payments in Lieu of Taxes and Shared Revenues,* pp. 3 and 177.
[15] Edison Electric Institute *Statistical Bulletin* for 1956, p. 57.
[16] Annual Report of TVA for 1956, pp. 37, 38.
[17] *Ibid.,* p. 38.
[18] Report of Department of Interior for 1957, p. 4.
[19] Rural Electrification Administration Annual Statistical Report for 1956, p. XVII.
[20] *"Our Nation's Water Resources—Policies and Politics,"* by Ben Moreell, p. 163, The University of Chicago, 1956, Chicago, Illinois.
[21] A Study Committee Report on *Payments in Lieu of Taxes and Shared Revenues,* p. 25.
[22] *Ibid.,* pp. 6, 7.
[23] *"Our Nation's Water Resources—Policies and Politics,"* by Ben Moreell, p. 163, The University of Chicago, 1956, Chicago, Illinois.
[24] Report of Department of the Interior for 1957, p. 102.
[25] *Niagara Power and Local Taxes,* a brochure of Power Authority of the State of New York, issued December 2, 1957.

Power Industry Becomes a Political Football

"FOR more than a generation politicians have advanced the argument that the power industry is 'impregnated with a public interest.'

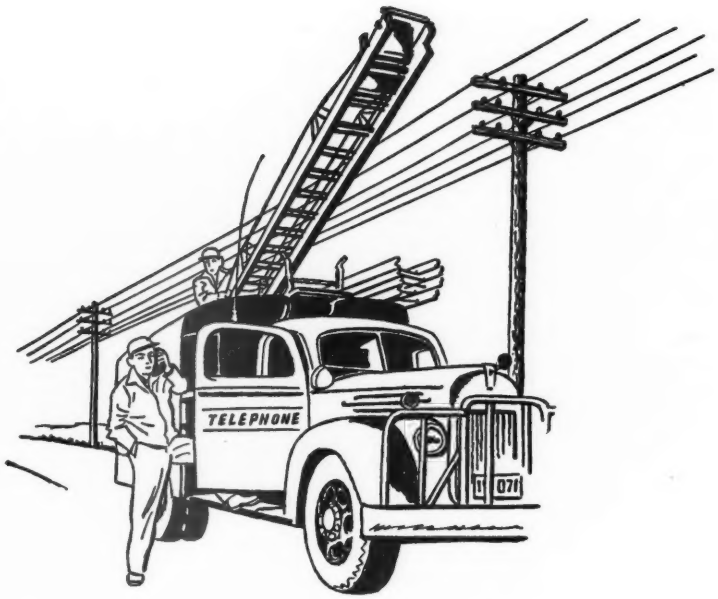
"Grass-root and rank-and-file response to this thesis appears to be waning in these boom times.

"Perhaps one factor in the change in popular sentiment lies in the objective evidence that the nonsubsidized electric utilities under state regulation have not used their 'natural monopoly' position to exploit customers.

"On the contrary, unit charges for electrical service since prewar times have actually declined, whereas the general price index of ships and shoes and sealing wax has doubled. . . .

"In view of the pivotal social utility of mechanical energy as a benefactor in the form of rising living standards, it is ironic that the power and light industry has been a political football. Certainly, though 'impregnated with a public interest,' the electric industry is not unique in this respect. Meat, milk, drugs, and many other products are likewise 'impregnated with a public interest,' but up to now they have not been seriously threatened in this country with 'creeping Socialism.'"

—M. S. RUKEYSER,
Columnist.



Lower Costs for PBX, More Traffic and Revenue

It is not uncommon these days for very large hotels to have switchboard installations and PBX call volume of a size which could have accommodated a small city only a few years ago.

By JAMES H. COLLINS*

You may shed a tear for the passing of some particular PBX, as did veteran Congressmen last Christmas, when the "Hill," in Washington, went from a manual board to direct dialing on outgoing calls.

"We don't like it!" complained some of the older statesmen, when interviewed by reporters. They had always called for fellow legislators by name. Operators on the "Capitol" board knew their voices, home districts, terms of office, committees, whom they usually talked with. These girls were living congressional directories.

When they were replaced by a directory, and numbers to dial, something went out.

The private branch exchange is one of telephony's oldest fixtures, drippy with sentiment. But in certain places it is on

*Professional writer, resident in Washington, D. C.

the way out, like so many accustomed things in our daily lives, and for the same hard reason—it drips costs.

As a telephone man, it will probably be the cost angle that appeals to you, and leads you to join the commercial department in selling PBX down the river. This is one of the latest sales jobs that has materialized in communications.

Consider the PBX costs of a big hotel, that home - away - from - home, with its guests' appointments, messages, morning wakenings, toll calls, valet service, restaurant orders, ten-minute notices of departure when every ten-cent item must be put on the guest's bill.

By 1955, traffic at the Waldorf-Astoria had doubled to more than 1.5 million yearly calls. The complexities of service were getting away from the best-trained operators. Typical is the Waldorf story of the caller who says, "I want to speak to the King," and the operator's answer, "Which King—we have several?" As for ambassadors, they are a dime a dozen at the Waldorf.

This famous hostelry and the Sheraton-Plaza, in Boston, asked their Bell companies to study their traffic, and see if costs could be eased. The telephone company gets only one dollar out of three that the Boston hotel pays out for telephone service, the rest going for PBX expenses, especially personnel.

For these two hotels telephone people have effected such economies that a hotel revolution has started all over the land, in non-Bell as well as Bell territories. Much of the burden of the home-away-from-home has been shifted to the guests themselves, along with direct outgoing calls. And they like it, immensely. Their pleasure is expressed in more revenue for the telephone company as well as the hotel. Their room calls have doubled.

Whether such improvements are adapted to all PBX's is a question for the engineers and commercial departments. It depends on the character of the traffic.

On a department store board, for example, direct dialing could hardly effect any improvement because the traffic is largely incoming calls from shoppers, with questions about merchandise—prices, sizes, materials, colors, hundreds of details. Operators answer from data sheets at their elbows, often changed in the course of the day. Complaints, returns, deliveries, misunderstandings, and a hundred other matters must be referred to the proper department.

Such an exchange is different, and the difficulties of simplification appear more formidable. One of the first steps taken by the commercial man is to get the "feel" of the PBX traffic. But it is certain that technical progress in telephony will find ways of attacking costs on every type of private branch exchange.

The rise and growth of the PBX are reflected in the history of the "Capitol," which serves the Senate and the House.

When Mr. Bell asked Mr. Watson to come down out of the attic, not to touch a thing, that was the simplest of telephone calls, person to person, over a two-station circuit. Early phone subscribers were satisfied with such connections for a time, the affluent merchant, the VIP of his day, talking from his store to his house. But soon subscribers wanted to talk to other subscribers, and the central exchange was born. When the merchant discovered that more than one phone in the store was a

great convenience, the little private branch board was invented, and handed over to him and one of his girls.

In 1878, Washington had 187 listings in its first telephone directory, only three of them governmental — the Senate, Supreme Court, and House restaurant. From time to time more government offices were connected—there is an interesting record of a bid, by the Bell company in Boston, offering installations of a "speaking tube hand magneto" phone for $5 a year, $17.50 for five years.

It was not until President McKinley's first term, in 1897, that a PBX was installed for the Senate, and another for the House a year later. Three page boys manned the combination boards when they were put together in 1900, and it is remembered all three rose in life, one a Congressman, another a judge, and the third a banker.

Until the direct dialing system was installed last year, "Capitol" had had only three chief operators in sixty years. Mrs. Harriet G. Daley served forty-seven years, to 1945, Nena Thomas ten years thereafter, and Clare Mann is the present chief operator. During all that time Senators and Representatives asked for "Joe" or "Tom," and operators knew who was meant. So, understandably, when Washington reporters asked legislators how they liked the new system, some felt that they were being jostled by progress.

Another interesting direct dialing job, started in Washington last year, linking scattered government agencies, still under way, looks like something in PBX service for large business organizations.

Uncle Sam carries on his business, biggest of all, in buildings that range from the classic temples of other days, with foothills of stairs to climb, and acres of wasted real estate, to the latest box-type office structures, dating from New Deal days, when the departments and bureaus had to have room for their overflows, and new agencies had to be hastily housed. In between may occasionally be found the "temporary" buildings, thrown up for the first World War, stucco and fiberboard, still occupied by government workers. A visitor viewing the White House today, with all these new buildings closing in from every side, may well wonder if it will eventually be walled in like Trinity Church by Wall Street.

There is always the Pentagon.

All of these agencies have their own PBX's, and until last year, to call from one to another, it was necessary to dial a code number, and then ask for a manual

¶ "The *private branch exchange is one of telephony's oldest fixtures, drippy with sentiment. But in certain places it is on the way out, like so many accustomed things in our daily lives, and for the same hard reason—it drips costs. As a telephone man, it will probably be the cost angle that appeals to you, and leads you to join the commercial department in selling PBX down the river. This is one of the latest sales jobs that has materialized in communications.*"

connection to the extension wanted. A study was made of the traffic, and it showed that one-third of all calls were from one agency to another, and that nine persons in ten knew the extension numbers they wanted. An Interdepartmental Dial System Switching Center was created, connecting all government agencies, and at the end of last year a dozen switchboards involving 40 agencies enabled government employees to dial 97,000 phones direct, greatly speeding the service. The code number is dialed, and then the extension number wanted. The conversion is still under way, as many agencies are not yet equipped for through dialing, and calls are still handled manually.

Government employees were not asked whether or not they liked the system. They were given a brief course of training on its use.

They like it.

CONVERTING a large hotel to direct dialing is a much more complicated affair. It involves not only engineering, and special equipment, but searching traffic studies, and preliminary tests of new setups, trying them on the customers. In Boston, a year was spent on preliminary studies, and in New York two years. Hotel men and telephone people worked together. The hotels have their own communications managers, who really started the thing by asking for advice and help in solving their traffic problems, and the telephone companies assigned different specialists to the job—engineers, commercial men, traffic supervisors, long distance, equipment, installation, and others. Nearly one hundred persons worked on the Waldorf installation.

Even Madison avenue was on the job, indirectly, for there were explorations of hotel guests' telephone habits and preferences, comparable to market surveys for finding out what the customers will buy. There was motivation research, and one angle that could be classed as a "hidden persuader."

One fact learned by telephone people may be worth knowing as sales diplomacy on hotel conversion projects—the Waldorf-Astoria customer is never referred to as a "guest." He is a "patron." There seems to be a fine distinction there.

The results of this pioneer spade work are applicable to hotel conversions wherever telephone people undertake to improve such PBX problems. Both hotels belong to large groups, the Sheraton Plaza to the Sheraton and the Waldorf to the Hilton chains. Conversions are now being made in other hotels of both groups. Boston telephone people have put the results in the popular form of a "hotel package."

A HOTEL PBX differs from many others in that it is a revenue-producing activity. Guests pay for outside calls, even those in the local area for which no message charge is made to subscribers. PBX rates were originally set to yield a margin of profit, but rising costs the past few years have wiped out profit, and also swept away some of the "velvet" that once enabled the PBX department to show earnings.

For example, conventions are nice business, filling hotel rooms, increasing restaurant and bar income, sponsoring banquets, and incidentally stimulating traffic. But the increase has crowded the manual boards; conventions find them jammed; guests complain. This has an influence in

Color Catches Up with the Telephone

"THE telephone industry was late in adopting color. For years, in other lines of business, color has been increasing sales of appliances, cars, home accessories, even industrial equipment. It gets attention, spurs the customers to redecorate. People like color. Maybe this is a vestige from days of savagery, but color does something to them, as do light and movement. Telephony had to catch up with its postwar backlogs before it was able to experiment with color, and then it was put to work by having the installer carry a color set into a house along with the standard black set. Thousands of families were getting service after months of waiting. Color was a surprise."

a hotly contested argument — where to hold the next convention. Next to the convention city, the hotel must be decided upon. Overcrowded hotel facilities give a black eye, word gets around; hotels are in competition as well as cities.

Immediately, the hotel loses needed switchboard revenue. With direct dialing, outgoing calls bypass the switchboard, incoming calls can be taken care of. The room phone becomes a private phone, with all outgoing calls registered and charged to the guest. On the manual board, with written tabs, many calls fail to be charged to the guest because tickets are late, lost, or illegible. With the direct dialing system, calls are automatically registered at the desk where guests check out, quickly entered on the final bill. At the Waldorf it was found that only about five calls in a hundred go outside the local area.

For toll calls, the guest can ring either the hotel's PBX, or with a code number reach the telephone company. This is a convenience where questions have to be asked about toll rates. The guest gives his name and room number, and after the call

is completed, the time and toll charge are teletyped on a private line to the hotel, ready to be added to the bill within a couple of minutes.

ANOTHER unprofitable item lifted from the manual board may be the messages left for guests during their absence from rooms. These are received on incoming calls, and are still handled manually. Operators write them out, but instead of the notice in the guest's key box, and a bellboy's trip to the room—generally involving a tip—the equipment engineers developed a lamp on the room set, which is lighted as soon as a message is received. The guest calls an operator downstairs, to be read the message over the phone. This makes for easier handling—the Waldorf has about 1,000 messages daily.

For the guest who has dictation, arrangements are being worked out for stenographic service over room phones, typed letters being delivered within the hour. On a tight schedule, between planes, a businessman does not always have time to go downstairs for dictation. This convenience helps him keep ahead of paper work which might otherwise pile up—bad for his company.

It also helps the hotel stenographer sell more service.

The bellboy has been given something better to sell. In fact, the new sales consciousness of the commercial men has spurred them to put numerous selling gimmicks into the hotel package, creating revenue for the hotel, and their company.

A dial phone in a hotel room today is a novelty. When the bellboy ushers in the guest and puts down his bags, he need not fuss with the curtains, or check the bathroom, or do the other things leading up to a tip. He calls attention to the dial set, and explains that calls can now be direct, just as in a home, and that the light is for messages that come in while the guest is out. On the bureau there will be a card giving further explanations, with rates for toll calls to different cities, and a suggestion that the guest's family and office might like to hear that he has arrived.

BUT the most surprising and potent sales gimmick has been color. This is the hidden persuader. The commercial fellows did not foresee how it would work. They did not even hide it. It can be left to do its own job.

The telephone industry was late in adopting color. For years, in other lines of business, color has been increasing sales of appliances, cars, home accessories, even industrial equipment. It gets attention, spurs the customers to redecorate.

People like color. Maybe this is a vestige from days of savagery, but color does something to them, as do light and movement. Telephony had to catch up with its postwar backlogs before it was able to experiment with color, and then it was put to work by having the installer carry a color set into a house along with the standard black set. Thousands of families were getting service after months of waiting. Color was a surprise. It was chosen so often, to match decorations, or just because it was new and pleasant, that the commercial department began to flaunt it, in color ads, and home shows, and central office displays.

Color in the hotel room has shown them something else. That it works while you sleep. The housekeeper selects it, and it

sells by suggestion, like that other surprising postwar gimmick, the outdoor public phone booth.

This self-selling feature was subjected to a test. In one of the Sheraton hotels, in Springfield, Massachusetts, three groups of rooms were set aside and kept occupied for a month. Two of the groups had the black set, as standard as the Gideon Bible, and the other had color. Color showed 16.7 per cent more traffic. One floor of the Waldorf had a 50 per cent increase in traffic after color. Everybody knows it is alluring to the housewife, but here it was selling itself to the hard-boiled businessman.

The public booth and the portable phone have been made more convenient, near the restaurants, bars, and convention halls, and to be brought to tables. They increase revenue and public appreciation of hotel service.

AUTOMATIC waking service is another improvement that can be credited to equipment engineers. At the Waldorf from 500 to 800 waking calls are left daily. Manually, this takes several operators on duty a couple of hours in the morning, a troublesome peak. For the Sheraton a morning call system allows a manual operator to set, on a board, the time a guest wants to be wakened, and the device takes on from there. The room phone rings automatically the next morning, and the guest, picking up the receiver to report that he's awake, hears a record: "Good morning; it is now 7:40 A.M.; the breakfast special in the cafe this morning is freshly squeezed orange juice, crisp grilled bacon, French toast, and coffee, 95 cents."

Records are used for things like valet service. The guest, calling after hours for a morning pressing job, is told that there is no valet on duty at that hour, but that he can speak into the phone and leave a recorded message, give his room number, tell what he wants done, and the valet will take care of him at whatever hour he names.

THE commercial man looking into this new field of PBX problems will be interested in the facts of hotel life. To get the "feel" of the problems helps solve them.

A telephone organization and a hotel have a great deal in common in being heavily manned, and requiring all sorts of specialists, most of whom have to be trained. At times, a hotel may have more

¶ "TELETYPE *setups are being tailored for corporations that have branch plants and sales offices scattered over the nation, to handle orders, check credits, control production, and guide management. All the new 'miracle' devices coming out of the engineering laboratories are embodied in such systems—closed circuit television, telephoto, facsimile. These save time and expense in actual communications, and reduce in many businesses a hidden and often unsuspected cost that bleeds away profits. In a word—paper work.*"

employees than registered guests — the Waldorf has 2,500 people, 100 of them switchboard operators. It is, of course, outstanding among caravansaries, but most hotels resemble it in fundamentals.

HOTEL personnel could be compared to the familiar iceberg, most of it out of sight. The guest sees doormen, room and billing clerks, bellboys, maids, waiters. But there is a larger force of invisible cooks, bakers, food preparers, stewards, storekeepers, engineers, electricians, plumbers, housekeepers, furniture repairers. The house doctor may never be called by the majority of guests, but at the Waldorf he presides over a hospital that treats 600 patients monthly. That tough character of the paperbacks, the house "tec," is in real life a quiet fellow, with a small police force, seldom seen unless needed, and with duties that do not get into the mysteries—at the Waldorf a message for the President of the United States gets special handling through the Secret Service.

Many hotels have a sentimental patronage. Mother and Dad stopped there on their honeymoon, and come back to celebrate an anniversary. The Waldorf entertains tens of thousands of newly-weds yearly, and is ready to make an occasion of them, if acceptable.

Hotel and telephone people working on PBX problems are soon trading comic happenings. At the Waldorf a real Moslem, in his robes and turban, got tangled up in a Shriners' convention, with its fezzes and tassels, and had to be rescued. A hundred or more waiters will be needed for a banquet, and are fed before starting work, as otherwise they would nibble away the banquet dishes.

ANOTHER PBX field in which the facts of life are as interesting as those of the hotel business, but entirely different, is that of the gas utilities.

Direct dialing would bring about little economy on a gas company board, because the volume of traffic is incoming. There is no revenue from customers, and costs are high because especially capable operators are needed.

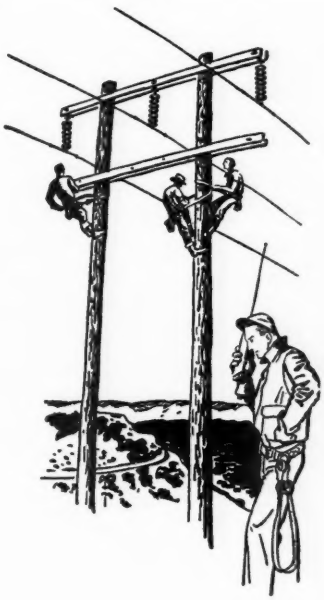
Hardly anybody calls a gas company unless something goes wrong with appliances. When life goes along with a lilt, the gas company is the last place thought of. So, telephone service is the gas company's chief contact with its customers. When they call up, it can generally do something for them, perhaps be remembered kindly, maybe score a little competitive advantage.

Since war's end, gas companies have not only taken on millions of new customers—one company now has more than a million meters—but has converted to a superior fuel, natural gas. This has twice the heat value of the old manufactured gas. Gas has also now numerous new appliances, has more to sell, and has keener competition. Electric power utilities have expanded, too, and have new appliances.

A gas company meets competition by maintaining a free service for customers, in emergencies, and when they have minor trouble with appliances. It also does a good deal of teaching, in cooking and domestic science classes, and perhaps sends speakers to talk to public groups. These activities, with their advertising, bring a flood of inquiries to the PBX board.

THE inquiries are bewildering in their variety. Run of the mill on a normal

The Ubiquitous Switchboard



"WHEREVER bulldozers go to work, and hammer and saw are heard, the commercial department can scout for PBX sales. PBX is also being replaced by teletype installations for scattered business and government organizations. Money has lately gotten new wings, and is flying from coast to coast by millions, faster than jet speeds, over the teletype systems recently installed for Federal Reserve banks. Formerly, transactions were carried on over a dual circuit, with an eastern center in Washington, and a western plexus in Chicago. Messages had to be retyped, and growing volume led to an automatic system with a nerve center in Richmond. It serves the 12 Federal Reserve banks and their 24 branches, and also member commercial banks."

day will bring requests for cooking recipes, a report of escaping gas, a student's questions about the chemistry of natural gas, a call for an executive, a misunderstanding about a bill, an order to turn on or shut off gas, an emergency call from an alarmed customer that may have to be attended to in minutes, or which can be taken care of tomorrow.

THAT is an ordinary day—what happens to the traffic when there is a storm or disaster can be imagined.

These calls have to be processed at the board. An emergency such as pilot lights out on appliances with no automatic shutoffs will be short waved to a service car for immediate attention. More emergency calls that appear urgent to the customer can be scheduled for service hours later, even days. Operators answer many requests for information directly, pass others on to the proper departments.

One outstanding fact of life in this traffic: The customer may never have called the gas company before, has a complaint, a chip on his shoulder, anticipates a runaround by a faceless corporation, finds himself talking to a person who understands his problem, who can advise and act. There are many gas companies with hundreds of thousands of customers —one with a million meters. Thousands of them never have occasion to call up. High-caliber PBX service makes friends of those who do.

TELEPHONE facilities for such an installation include ample trunks for normal traffic, with a reserve for occa-

sions when emergencies jam the board, ample lines for interdepartmental requirements, and timesaving equipment generally.

Maybe most useful will be a telephone organization's experience and methods in training operators. Tests gauge voice quality, telephone personality, clarity of speech. Self-control in answering excited persons, patience in dealing with hostile ones, ability to put herself in the customer's shoes are other essentials, usually developed on the board. These operators must also have the ability to absorb a great deal of information, and to work as a team. Training is continuous, and so are checks on each operator's telephone personality, initiative, judgment. Costs are high, but results in customer good will have been found worth it.

OLD PBX facilities are being outgrown, or lack timesaving devices that have been developed since they were installed. Innumerable interesting problems are to be found in almost any telephone territory, like that of the Los Angeles City Hall.

Thirty years ago City Hall traffic had grown so heavy that a new board was needed, and the telephone company installed one of the most advanced of that day, permitting direct dialing inside, and code dialing to reach the PBX's of city agencies outside. Since then the city's population has more than doubled, city employees and PBX traffic have nearly doubled, and again a new board was needed—though the old one had stood up in every way, except in not being elastic.

Last year a 1957-type board was put in, most advanced, with twice the capacity of the old one, room to double as traffic grows still more, and various timesaving devices that speed up connections and reduce operating costs.

For one, the operators no longer have to press a ringing key — ringing begins automatically when a cord is plugged in. For another, the familiar jiggling and "Operator, operator!" have been done away with. Many outside calls come from citizens with problems, who ask for a certain department—the wrong one. A transfer has to be made. The department person called flashes a signal and hangs up. This signal flashes continuously before the operator until she has time to answer. She calls the department person again, receives transfer instructions, and the required department is rung. The citizen calling from outside stays on the line, having been told that his call will be transferred. This board is lower—like cars—and the operator's feet are on the floor instead of up in the air on a rung. Working comfort is increased by a deeper key shelf.

On many PBX's, operating costs are swollen by a short traffic peak, when office people want to talk at once. The Los Angeles City Hall peak is only an hour in duration, from 7:45 to 8:45 A.M., when employees are arriving, getting settled in their work. By asking them to plan their work and stay off the peak, this load has been eased.

PBX is also being installed in numerous lines of business for its sales value—as in the motel. As highways are improved, and new ones built, tourist travel increases, and motels go up to accommodate it. Commercial travelers are desirable guests, too—expense accounts! To attract businessmen, phones are put in, served from a small switchboard, an ad-

vertisable feature, like air conditioning, television, foam rubber beds. This is an added source of revenue, the manager operating the switchboard. It is telephone experience that a few phones in the best rooms, with a couple of trunks, pay a motel so well that generally a larger board is ordered in, with more trunks, and probably a couple of direct toll lines.

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Money has lately gotten new wings, and is flying from coast to coast by millions, faster than jet speeds, over the teletype systems recently installed for Federal Reserve banks. Formerly, transactions were carried on over a dual circuit, with an eastern center in Washington, and a western plexus in Chicago. Messages had to be retyped, and growing volume led to an automatic system with a nerve center in Richmond. It serves the 12 Federal Reserve banks and their 24 branches, and also member commercial banks. Funds are transferred in minutes, yet stay where they are. A New York commercial bank depositor effects a transaction calling for a sum of money to be paid or held in escrow in San Francisco. "Fed" handles it in minutes, by a debit and a credit. There is an electronic "brain" at the nerve center that detects errors and calls a halt until they are rectified.

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These nation-wide systems have another interesting angle.

They nearly always involve non-Bell as well as Bell companies, a field in which some very smooth and very quiet teamwork is going on, creditable to the unified telephone service of our country.

PBX is one of the oldest things in telephony.

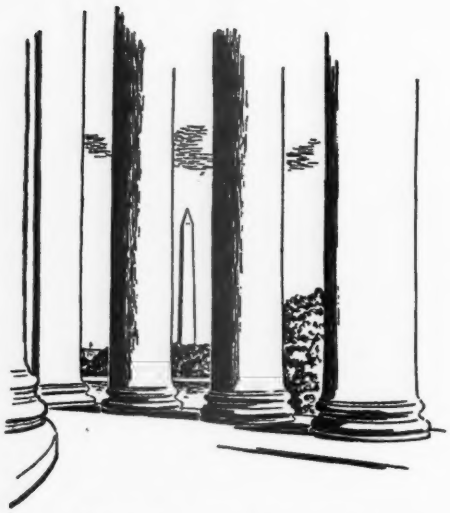
It started as the little box where Hattie or Jimmy made inside connections.

It had a human character of its own. The standard, impersonal company service came to the door, and friendly voices took over, names were remembered, little chores taken care of.

But this is the push-button age.

¶ "THE *crying need of the hour is for informed, articulate business leadership on the local level, as well as on the national level. We must depend for the future of our economy on a relatively few men of integrity, vision, intelligence, and ability who will constitute magnetic poles around which others will cluster. That has been the history of all great movements.*"

—PHILIP M. TALBOTT,
Former resident, Chamber of Commerce of the United States.



Washington and the Utilities

CVA Plan Weighed

A SPOKESMAN for the private electric utility industry in the Pacific Northwest, testifying at recent hearings before a subcommittee of the Senate Public Works Committee, took a dim view of a legislative proposal to establish a Columbia River Development Corporation. The bill, S 3114, was drafted by the Northwest Public Power Association and introduced by Senator Neuberger (Democrat, Oregon).

Kinsey M. Robinson, president of Washington Water Power Company, predicted that enactment of the legislation would bring disaster to the private power industry in the area and the free enterprise system in general. Said Robinson:

> This bill in my judgment would preempt the power field in the Northwest and invite, if not compel, the complete annihilation of the private companies. We certainly do not need this bill. Federal domination of power generation in the Northwest, as elsewhere, failed to meet the growing needs of power in our area. A program has been and is under way moving us from the constant threat of power shortage to a position of an adequate supply of power for industry, and new jobs now and for the future and for urban and rural needs.

THE bill would substitute a federal corporation for the present Bonneville Power Administration. The federal government, acting through the corporation, would undertake the primary if not the sole responsibility for providing the electric energy requirements of the entire area. "This responsibility," said Robinson, "is now shared by regulated private enterprise, local government agencies, and the federal government. I cannot say that the present arrangement is wholly satisfactory, but I can say there is no need to expand the government participation beyond that of existing agencies to meet such requirements."

Robinson pointed out that the bill does not enforce, strengthen, or make more effective the present system, but rather seeks to abolish it altogether. Local regulated private enterprise and local government agencies would have only such rights and participation in the electric business as the new corporation might

see fit to assign to them. The corporation, said Robinson, "would be a giant, a czar, or a dictator over the electric power business. Centralized control of this type is foreign to every concept of government that we have and to which we pledge support." Robinson assured the subcommittee that the private utilities have under way a program which will assure that the Pacific Northwest need no longer be called a power-short area.

It is proposed that the power corporation would be financed by the issuance of revenue bonds, similar to present proposals for TVA financing. The self-financing aspects of the measure were endorsed at the hearings by Truman P. Price, representing the governor of Washington, and Gus Norwood, executive secretary of the Northwest Public Power Association.

Related to the establishment of a power corporation is Neuberger's bill, S 2206, to amend the preference clause governing sales of Bonneville power. Although the measure is sponsored by one of the leading members of the public power bloc in Congress, administration leaders have unofficially announced their opposition to it. The bill, designed to attract industry to Oregon, would give the Bonneville Power Administrator more latitude in allocating power by permitting him to establish priorities for industrial uses which will best promote diversified economic development of the several states of the Columbia river basin.

Neuberger's preference proposal, if adopted, would represent "a marked departure from previous national policy," according to Secretary of Interior Seaton. Speaking for the Interior Department at the hearings, Seaton's assistant, Theodore F. Stevens, said the department "intends to fully defend the preference clause —unless the people of the region indicate that they generally agree it should be altered."

Most of the advocates of public power are expected to oppose the preference clause proposal, even though it comes from one of their own number. For a change, it now appears that they will have the administration on their side. Although the Neuberger Bill would apply only to Pacific Northwest states, its actual effect would be far broader. Seaton has already said that the principle it embodies would have to be applied everywhere when it is adopted for one area. Calling the preference clause "the hallmark of the power-marketing policy of the federal government," Seaton has told the committee that the Interior Department "could not make a recommendation on such legislation unless the reasons for such a change, either on a regional basis or throughout the nation, have been more definitely demonstrated and justified."

True D. Morse, Under Secretary of Agriculture, has been even more emphatic in his opposition to changing the preference clause in the manner Neuberger suggests. In a letter to the committee, Morse said flatly that his department does not favor enactment of the bill. He said the proposal would divert electricity from "domestic and rural consumers, many of them served by REA-financed systems whose energy requirements continue to expand substantially."

Since there is no plan to push at this session of Congress either of Neuberger's bills, the reaction of public power proponents will probably not crystallize until next year when both bills may come up for formal consideration. Senator Jackson (Democrat, Washington) has predicted that the preference bill "could touch off a real hassle." Both Jackson

and his colleague, Senator Magnuson, are expected to join the opposition to the bill, coming as they do from a state which has five times as many public power districts as Oregon, all of which qualify for preference treatment.

Other public power advocates are expected to line up against any plan to change the hallowed preference clause which they have long regarded as protection against "monopoly," and the absorption by private utilities of small rural co-ops and municipal electric systems.

Water Resources Conference

WHILE the Senate Public Works Committee was hearing the pros and cons of proposals for power development in the Pacific Northwest, experts on the problems of water resources development were meeting uptown at the Shoreham hotel in a closed-door briefing conference. The conference, under the joint sponsorship of the Federal Bar Association and the Bureau of National Affairs, consisted of a number of panel discussions, including several of interest to electric utility companies. Among the speakers were Willard Gatchell, general counsel of the Federal Power Commission, A. J. G. Priest, University of Virginia law professor and well-known utility law specialist, and Leland Olds, former FPC chairman and now director of Energy Research Associates.

Gatchell stressed the importance of making hydroelectric power self-supporting, especially with regard to the interest factor. He thought that the interest factor should be an important element in determining the ratio of benefits to cost in any hydroelectric development, federal or otherwise. He also commented on the fact that benefit of federal credit and tax exemption may be viewed as forms of subsidy. Finally, Gatchell referred to the inequity of denying the tax-paying customers of private electric utility companies equal opportunity to consume power from federal projects as compared with the preference enjoyed by government-owned utilities. He pointed out that if such power could be purchased by private companies it would have to be accounted for on a cost basis and private company consumers would benefit in a corresponding way. Gatchell defended the licensing of the Idaho Power Company's Hell's Canyon dam and other middle Snake dams as being the logical disposition of the development problems in that area.

FORMER FPC Chairman Olds devoted his remarks to extolling the Russian example of comprehensive basin development. By contrast he condemned what he called the waste of potential resources by piecemeal or partial development, specifically referring to the Hell's Canyon license. He said that the very fact that TVA is now twenty-five years of age without a similar project being launched elsewhere by the federal government is a "sad commentary on corporate propaganda." Olds rationalized the desirability of subsidized basin development by pointing out that private capital must make a higher return, thereby cutting the size and scope of comparable projects and accordingly limiting the benefits to be obtained.

At another panel discussion, A. J. G. Priest cited the Idaho Power Company's Snake river project as an example of the creative use of investors' capital to provide for the conservation of water resources and the generation of tax-collecting kilowatt-hours. Priest said:

If investors' dollars are permitted to

complete the Hell's Canyon project, every kilowatt-hour Idaho Power Company delivers will collect its full share of tax burdens and will be distributed at prices fixed by the Federal Power Commission (interstate sales) and by the Idaho, Oregon, and Nevada commissions (local sales) . . . I believe in regulation because the overall results it has achieved have been greatly in the public interest. I also believe that kilowatt-hours should collect taxes in order to equalize the treatment of consumers who buy those kilowatt-hours. Furthermore, I am convinced that tax-gathering kilowatt-hours can be used with vast effectiveness to conserve and to develop the nation's water resources.

General Person, Assistant Chief of Engineers, told the conference that the Budget Bureau is now working on legislation for uniform standards of cost sharing between local interests and various federal agencies, on water resources projects. Under Secretary of Interior Chilson said that the key to comprehensive water resources development in most of the West is in large storage reservoirs.

New Gas Ruling

FURTHER clarification of the FPC's power and duty to regulate wellhead prices of natural gas has come in a decision by the U. S. circuit court of appeals for the District of Columbia. The court has ruled that the commission may authorize construction of a gas pipeline without ruling on the reasonableness of the price to be paid by the pipeline for gas supplied by independent producers. In other words, it is not necessary for the FPC to rule on the price in the same proceeding in which the construction certificate is authorized.

The 2-to-1 ruling upholds the contention of the FPC that it is not required under the Natural Gas Act to exercise judgment of what price a pipeline should pay in the first instance for gas it takes from a field in which it has not previously purchased gas. Unless appealed and overruled, the decision will permit Natural Gas Pipeline Company of America to extend its Chicago-Texas Panhandle pipeline some 350 miles to obtain gas from three independent producers under contracts calling for a wellhead price higher than that prevailing in the area.

Interveners in the case contended that the FPC erred in granting the construction certificate without imposing a price condition, because Natural's proposed price (13.9 cents per Mcf) exceeded the prevailing price in southern Oklahoma (11 cents) where the gas is to be purchased. It was argued that where the price is higher than that being paid by others in the area, the FPC is required to impose a price condition or else make a finding that the agreed price is just and reasonable. In other words, it was asserted that in a proceeding for a certificate under § 7(e) of the act, when the rate is challenged by a party raising a substantial question as to its reasonableness, § 4(a) imposes a mandatory duty on the commission, as an essential prerequisite to the granting of permission to make a sale, to insure that the proposed rates are just and reasonable.

JUDGE Bastian, writing for the majority, rejected this argument. He said that § 4(a) states the substantive objective of the act, that rates be reasonable; it does not specify the procedure by which this objective is to be obtained, that procedure being prescribed by §§ 4(d), 4(e), and 5 (a). Judge Bazelon dissented.

Telephone and Telegraph

Higher Earnings—Better Service

"Low earnings mean poor service," Edwin M. Clark, president of Southwestern Bell Telephone Company, told members of the Missouri-Kansas Independent Telephone Association who met late last month in Kansas City, Kansas. Clark's talk singled out some problems and goals common to all telephone companies: to (1) improve earnings, (2) strengthen management, and (3) win public and employee understanding of basic aims.

"If we don't get good earnings—a fair profit—we won't be able to meet the needs of the public," he said. "Low earnings mean the deterioration of your plant, the downfall of your business. But the public won't stand for that," he pointed out. "The public wants good service and it wants all of us to provide it. The telephone business is no different from others in its needs for a fair profit. That sounds obvious. But is it? Some people have the idea that a utility can be starved to death."

Clark blamed the telephone industry for the public's misunderstanding of this real problem, because of the industry's failure to tell its story any better. He asked:

How did the idea get started anyway that 6 to 7 per cent was a fair return for the telephone business? Why has the telephone business gone along with the 6 to 7 per cent theory? Six to 7 per cent were figures picked by regulatory bodies in a day when costs were a good deal lower. In a period of continuing inflation, 6 to 7 per cent just won't do.

Clark pointed out that manufacturing industries in both Missouri and Kansas earned an average of 12 per cent in the postwar period. Why, he asked, should there be a spread of 6 per cent between the earnings of manufacturers and the telephone industry?

"Manufacturers earn what competition allows them," he declared. "I say earnings of the telephone industry should be the same as allowed by competition where business risks are comparable. It is not very realistic to believe that the company that makes the least will give you the lowest rate. After all, regulation was set up as a substitute for competition. Why then, if we are living under a substitute for competition, should we earn less than competition itself allows?"

As risks arise and inflation goes on, he said, the telephone industry needs to earn at least 8 per cent. "With 8 per cent earnings the telephone industry can com-

pete for the hundreds of millions of dollars needed in years to come to build telephone plant in Missouri and Kansas and the rest of the country," Clark said. "Remember, we compete for capital with other industries—unregulated industries—industries earning 10, even 15 per cent. With earnings of at least 8 per cent, we can provide topnotch service at rates lower than they otherwise would be. These are facts—facts turned up in a comprehensive nation-wide study of American business. This study showed that electric and gas utilities which earn relatively well give as good or better service—and at lower rates—than those which earn poorly. It also showed that telephone rates are lower in states where earnings are better than average."

The reason, he explained, is that with good earnings business can be operated more efficiently and economically. Poor earnings mean hand-to-mouth, day-to-day operations, engineering and construction in bits and dabs, double work, shorter plant life, and additions later on, and higher costs. All this would result in higher rates for telephone users, Clark continued, because the customers pay the penalty for a company forced by poor earnings to operate inefficiently.

CLARK urged his audience to explain these things to the public. Telephone customers, he said, have a hard time understanding that good earnings mean rates lower than they otherwise would be. He said:

> We know a boom is coming in the 1960's. With good earnings now, the telephone industry can start getting ready now for the boom—make our central office buildings larger than present needs require so they can handle future demand, put in larger cable, provide more long-distance circuits. If we've got to scrape along from year to year—and can't provide for future demand—then the telephone ratepayers will be penalized, because their rates will be higher than they would be if good earnings now permitted us to plan for the future.

CLARK pointed to the need for regulatory bodies to keep pace with the times to allow utilities to keep abreast of inflation. "The decision of the Missouri supreme court last December was important," he said. "The court ruled that the public service commission must consider the present cost of utility property in fixing rates. The court said the commission must use fair value of utility property in determining the rate base. Using original cost in fixing rates is completely unrealistic; everyone knows that costs today are far greater than they were in years past. Regulation without considering present costs could mean confiscation. The fair value approach to regulation is necessary to offset the evils of inflation."

Clark then turned his attention to another problem of the telephone industry in getting ready for the future: the need to strengthen management. "Management," he said, "is an art for which people can and should be trained. My company has invested a lot of money—and I think invested it wisely—in management development courses. This is an investment that's paying dividends now and will continue to pay them in the future." He explained:

> The rôle of management is to increase productivity, spark ideas, and institute innovations, control costs, and push sales. The telephone industry has been mechanizing to increase productivity since the 1920's when dial machines were introduced. But the industry is going to have to mechanize

more and more each year, lest the high cost of labor expenses put an unbearable burden on earnings. Too often people run their businesses along the old rut. Well, I say we ought to try all ways—the old, the new, the untried. Go any way you can, but go for gain.

As his third point, Clark stressed the importance of both public and employee relations in improving earnings and strengthening efficiency of operation. "The public is our boss," he said. "The public is also the boss of the regulatory bodies. To get good earnings, we not only need to operate our businesses efficiently, but we also need to obtain the understanding of the public and regulatory bodies. The telephone industry should sincerely try to give the public what it wants. In my business we go to the public to find out what they are thinking. We ask customers in attitude surveys and post card canvasses. Through advertising and public relations programs we try to keep the public advised of what we're doing. The public has a stake in our business, so we feel the public has a right to know how we're running it.

"We also feel it's important to keep our employees informed, because employees are our most important, most influential public relations force. Surveys show that people who know telephone employees who talk about the business have a higher regard for the business than people who don't know any telephone folks.

"Our employees can help us tell our story to the public if we keep our employees informed."

"The truth of our story," he said, "could in time win out over the out-of-date and harmful theory of 6 to 7 per cent earnings."

Community Antennas

Former Colorado Governor Edwin C. Johnson has warned that other states may have to step in to regulate television activities if the FCC continues to "create monopoly" by its inaction.

Johnson made the statement in testimony before a Senate Interstate Commerce subcommittee. He recalled his own action when, as governor of Colorado, he had reacted to an FCC cease and desist order on a booster station established to serve viewers without cost by issuing an executive order making the booster station a state agency.

The Interstate Commerce Committee, Johnson said, "should not tolerate further delay" on the part of the FCC in regulating the operations of so-called booster, reflector, and translator TV equipment. The ex-governor testified after Frank Reardon of Butte, Montana, had reported how a TV station he founded in Kalispell, Montana, was forced to discontinue service primarily because of "disastrous" policies pursued by the FCC "which favor community antenna television systems and which severely penalize local television broadcasters."

Johnson said other states may have to step in as Colorado did if the FCC fails to act quickly. State governments, he said, "cannot sit idly by and see a local television station destroyed by another television agency which is unregulated and doesn't have to have a license." The failure of the FCC to assume its proper rôle in providing adequate regulations for TV in sparsely settled areas is "outrageous," Johnson said. He took note of the Kalispell case and commented that community antenna systems are expanding their services—provided to subscribers for a fee—by using microwave transmissions to pipe TV signals from large cities.

Financial News and Comment

By OWEN ELY

High Lights of Electric Utilities' Reports to Stockholders

MAJOR topics of interest to electric utility stockholders vary somewhat from year to year, with business and political shifts. For some years this department has attempted to summarize these topics as reflected in the annual reports to stockholders. This year we omit reference to format—methods of presenting the story in text, table, chart, and picture—since this angle is usually covered by another publication in its annual prize awards for the best-prepared reports.

Sales, Development, and Promotion

GROWTH. Savannah E&P's report bears the slogan "Business Is Good in Savannah," which seems borne out by the discussion of "economic high lights of the Savannah area" and by the company's excellent record of share earnings (up 17 per cent last year). Southern Company's report describes its three-year $500 million construction program based on continued rapid growth. California Electric Power reports that sales have doubled in the past seven years and are expected to redouble in the coming six years. Long Island Lighting states that the very rapid pace of new home construction in its area during the postwar period has been followed by a less rapid but more orderly, better-planned growth. While New York city is not considered a growth area, the 72 large office buildings recently completed or in various stages of planning and construction will provide Con Edison with substantial electric sales for air conditioning and the automation of elevators and other equipment.

AREA DEVELOPMENT is actively promoted by many utilities. Atlantic City Electric has helped establish many community and regional planning groups. Carolina P&L has been active in the "Finer Farms" and "Finer Carolina" programs; the latter has involved over 3,000 projects in the past six years. Central Illinois Light helped promote a comprehensive study of the Peoria area by the Urban Land Institute and other groups. Wisconsin Electric Power and Minnesota P&L

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describe the harbor improvements in their areas, designed to obtain full benefits from the St. Lawrence seaway next year. And in Minnesota the development of taconite (low-grade iron ore) is an important regional project.

APPLIANCE SALES were down about 12 per cent last year but some companies made special promotional efforts with rewarding results. Florida P&L reported a 7 per cent gain, and American Electric Power had the largest one-year sales in its history. The latter's best showing was made in clothes dryers, where saturation rose to about 25 per cent; saturation in ranges was increased to 63 per cent, and in electric water heaters to 28 per cent. The new quick-recovery water heater is expected to aid future sales.

Farm usage. American Electric Power reported an increase in annual usage per farm of 8.5 per cent over 1956 and 53 per cent over 1952, with some farms using as much as 12,000 to 32,000 kilowatt-hours annually. Atlantic City Electric's 7,700 farm customers used one-third more electricity than the average U. S. farm, reflecting the company's "Farm Better Electrically" program. Many farmers now use electricity for rapid cooling of farm products, operation of refrigeration rooms, automatic poultry and cattle feeders, barn cleaners, egg graders, freezers, and other labor-saving devices, as well as automatic appliances in the farm home.

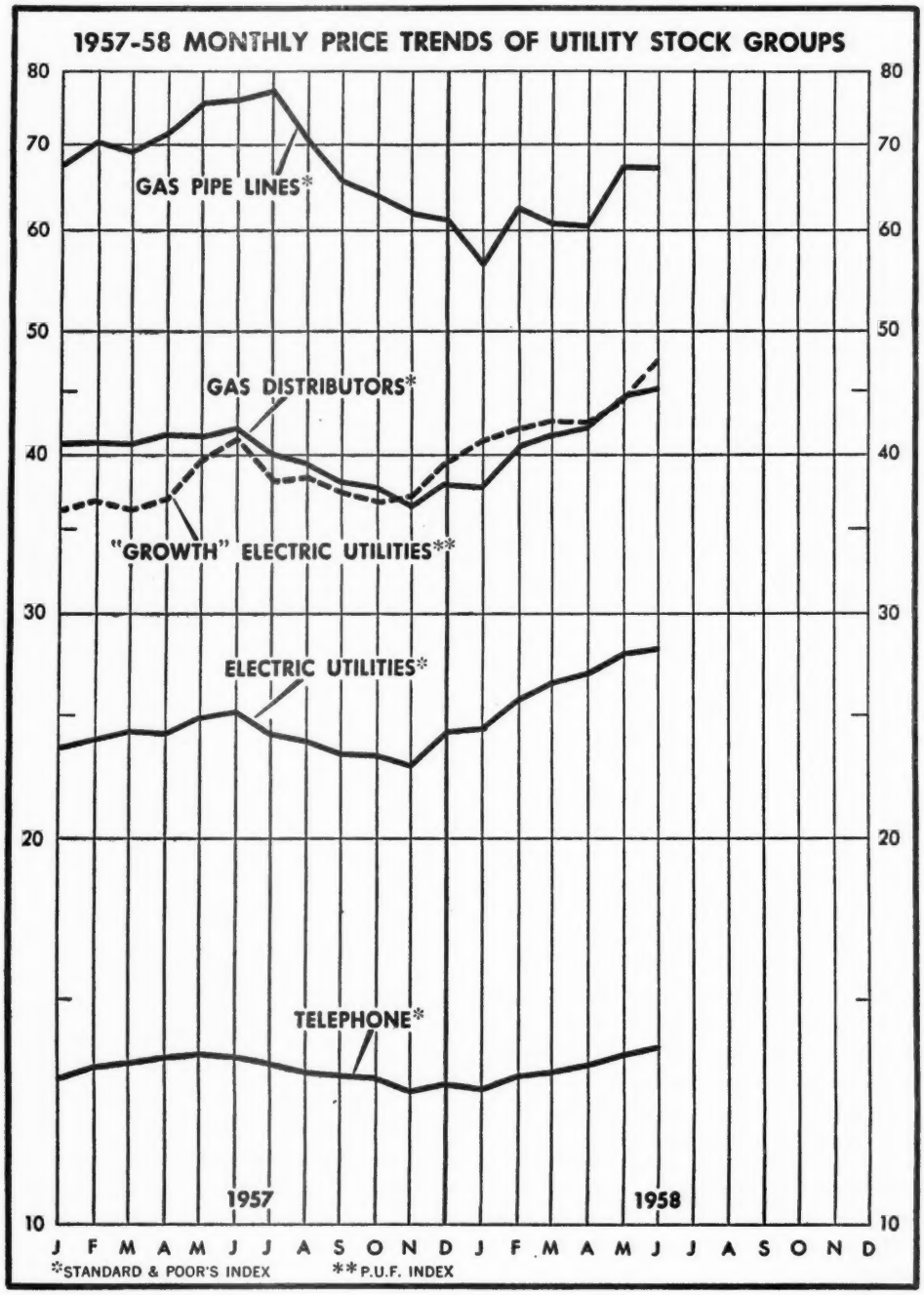
ELECTRIC HEATING is a topic of rapidly increasing interest since the heating load helps to offset the growing air-conditioning load. American Electric Power last year installed 192 heat pumps (bringing the system total to 490) and 2,946 resistance-type units of electric heating (raising the total to 9,976), a large proportion of the latter having converted from other types of heating. The system also installed 10,430 room air conditioners including many of which were coupled with resistance heating. Other customers using electric space heating included schools, motels, churches, stores, offices, industrial plants, etc. The first all-electric school opened in 1955 has attracted nation-wide attention; at the end of 1957 seven were in operation, eleven under construction, and eight more planned. Among commercial and industrial customers 112 heat pumps were added, bringing the total to 290.

AEP is conducting schools and symposiums in heating and air conditioning for architects, engineers, and electricians. It is also pushing the study of solar energy collectors as an auxiliary heat source for the heat pump—as well as the problem of storing heat. Individual room heat pump units are being developed and this may be the most practical approach to the whole problem. Florida Power Corporation, which has pioneered with the heat pump, added 2,000 residential units last year. Western Massachusetts Companies, while not operating in a favorable area, is now pushing electric house heating, with a special day-night flexible rate for all-electric homes.

Revenues, Rates, and Regulation

BECAUSE of the many complications in the regulation of gas rates, this review will be devoted mainly to electric operations, and for convenience the material culled from stockholders' reports is arranged by areas.

California. Pacific G&E obtained a $17 million rate increase effective last November, and at about the same time Southern California Edison obtained a $25 million increase, the rapid jump in fuel costs in the state having necessitated such relief. California Electric Power re-


1957-58 MONTHLY PRICE TRENDS OF UTILITY STOCK GROUPS
80
70
60
50
40
30
20
10
GAS PIPE LINES*
GAS DISTRIBUTORS*
"GROWTH" ELECTRIC UTILITIES**
ELECTRIC UTILITIES*
TELEPHONE*
1957
1958
J F M A M J J A S O N D J F M A M J J A S O N D
*STANDARD & POOR'S INDEX
**P.U.F. INDEX

cently obtained an 8 per cent rate increase. San Diego G&E has asked for $9 million more revenues, to raise the rate of return to 6.55 per cent, but the case has not yet been settled.

New England. Public Service of New Hampshire sought a modest rate increase early in 1957, but the award was cut to about one-quarter of the requested amount, with the balance made up by changing accounting rules to require "flow through" of deferred taxes. Central Maine Power finally obtained part of its requested rate increase following a court appeal from the commission's decision; here again the issue was whether tax savings from accelerated depreciation should "flow through" to customers. New England Electric System obtained a $1.3 million increase in Massachusetts recently, but the request for a $2.6 million increase in Rhode Island was denied, and has been appealed to the state supreme court. An electric subsidiary of New England Gas & Electric obtained a small increase in rate last March designed to bring its rate of return up to about 6.8 per cent.

NEW YORK STATE. Niagara Mohawk Power received an $8.2 million rate increase last August to compensate for higher costs due to the loss of the Schoellkopf station, and further relief may be sought. New York State Electric & Gas filed in December for a $4.2 million increase, still under consideration. Rochester Gas & Electric has asked for a $2.5 million rate increase. Consolidated Edison has obtained increases in gas and steam rates estimated to yield $6.8 million per annum, and has requested an increase of $9 million by elimination of "conjunctional billing."

Other eastern states. Pennsylvania P&L reduced rates $1.4 million annually beginning February 1, 1957, and refunded substantial amounts covering past years' collections plus interest. Baltimore G&E in January, 1958, requested a $10 million increase, but the amount was later increased because of extraordinary storm losses.

Middle West. Louisville G&E received a rate increase of $4.5 million in November. Minnesota Power & Light began adjusting its rates upward in February, 1957, without difficulties; there is no state commission jurisdiction. Consumers Power in January, 1958, filed an application for an increase of nearly $13 million. Public Service of Indiana's long-drawn-out case before the commission and courts was finally moderately successful. Illinois Power late in 1957 asked for a $4.2 million rate increase, and Commonwealth Edison in October asked for $26 million; both are still pending. Wisconsin Electric Power last November requested a 6½ per cent increase. Empire District Electric asked for a combined increase in four states—a rather unique case; joint sessions of the commissions were held and increases were allowed by three commissions, with the fourth expected. An outstanding regulatory event was the decision of the supreme court of Iowa in September sustaining fair value, described in the report of Iowa-Illinois G&E.[1]

South. Some southern utilities, with their increasing earning power, found it necessary to cut back rates a little. Florida Power & Light reduced rates about $4.7 million, but share earnings continued to gain. Gulf States Utilities made some further small reductions, following cuts of recent years.

Inflation and Operating Costs

DETROIT EDISON'S report stresses the problem of inflation and is increas-

[1] Iowa-Illinois Gas & E. Co. *v.* City of Fort Dodge et al. 85 NW2d 28, 20 PUR3d 159.

ingly concerned with the steadily rising prices of heavy power equipment which substantially offset the economies achieved by advances in technology and the use of larger units. The company points out that higher construction costs are particularly bad for an industry that requires an investment of $4-5 for every $1 of revenue. Utilities in California, Florida, and Texas were affected by rising costs of gas and oil used for boiler fuel. Florida utilities were protected by rate adjustment clauses while those in California were not, so that they had to request substantial rate increases. In Texas utilities were protected in large part by long-term contracts.

Operating Efficiency

LARGER GENERATING UNITS. The American Electric Power System, which operates in seven states and has the largest electric output of any private utility organization, continues to pioneer in the introduction of larger and more efficient generating units. At its Philo plant, the first U. S. supercritical-pressure unit, operations began in 1957 and the report states: "In addition to utilizing steam conditions of 4,500 pounds per square inch pressure, 1,150 degrees Fahrenheit temperature and double reheat—all new 'firsts,' this 107,000-kilowatt unit is the first equipped with a gas-cooled generator

MAY UTILITY FINANCING

PRINCIPAL PUBLIC OFFERINGS OF ELECTRIC AND GAS UTILITY SECURITIES

Date	*Amount (Mill.)*	*Description*	*Price To Public*	*Underwriting Spread*	*Offering Yield*	*Aver. Yield For Securities of Similar Quality*	*Moody Rating*	*Success Of Offering*
		Bonds and Debentures						
5/7	$ 7.5	New Jersey P. & L. 1st 4⅛s 1988	102.17	.60C	4.00%	4.03%	A	c
5/13	16.0	Public Service of Oklahoma 1st 3⅞s 1988	99.56	.79C	3.90	3.69	Aa	b
5/14	15.0	United Gas Improvement 1st (s.f.) 4⅛s 1983	101.50	.70C	4.03	4.03	A	a
5/15	20.0	Long Island Lighting 1st 4⅛s 1988	101.00	.78C	4.07	4.03	A	b
5/15	20.0	Merrimack-Essex Elec. 1st 4⅛s 1988	102.50	.92C	4.35	4.03	A	b
5/20	20.0	Gulf States Utilities 1st 4s 1988	102.66	.69C	3.85	3.68	Aa	b
5/21	25.0	Illinois Power 1st 4s 1988	102.66	.74C	3.85	3.68	Aa	c
5/22	18.0	Central Hudson G. & E. 1st 4⅛s 1988	102.17	.78C	4.00	4.01	A	c
5/22	22.0	Brooklyn Union Gas 1st (s.f.) 4⅛s 1983	101.17	.84C	4.05	4.01	A	b
5/28	25.0	Appalachian Power 1st 4s 1988	100.87	.72C	3.95	4.01	A	c
5/28	25.0	Transcontinental Gas Pipe Line 1st (s.f.) 4⅛s 1978	99.25	1.05N	4.68	—	Ba	a
		Preferred Stocks						
5/12	3.0	Wisconsin P. & L. 4.76% Pfd.	100.00	N	4.76			e
5/20	16.0	Public Service of Colorado 4.64% Pfd.	100.00	1.90N	4.64			a
5/28	15.0	Transcontinental Gas Pipe Line $5.70	100.00	3.00N	5.70			a
							Earns.-Price Ratio	
		Common Stocks—Offered to Stockholders						
4/30	15.5	Long Island Lighting	22.25	.14N	5.39		6.67%	f
5/12	6.3	Wisconsin P. & L.	26.25	N	5.18		7.52	g
		Common Stocks—Offered to Public						
5/20	10.4	Gulf States Utilities	43.13	1.11C	4.17		5.21	a

C—Competitive. N—Negotiated. a—Reported issue was well received. b—Reported issue was fairly well received. c—Reported issue sold somewhat slowly. e—Offered to stockholders and employees. f—Offered on 1-for-10 basis. g—Offered on 1-for-12 basis.

Source, Irving Trust Company

stator and rotor." This unit is a forerunner of the 450,000-kilowatt units now being built by AEP subsidiaries which will produce new economies through space-saving and thermal efficiency, mainly through use of steam at the supercritical pressure of 3,500 psi. The company is continuing laboratory work in the burning of char, a by-product of the low temperature distillation of bituminous coal. Together with equipment manufacturers, it is studying the combined gas turbine and steam turbine cycle as a future possibility. AEP is also first in the field of high-voltage transmission, and completion of its 345,000-volt interconnection with Commonwealth Edison is virtually completed.

IBM calculators. Duke Power reports that it is renting an IBM 705, Model 2 computer system—the latest, largest, and fastest type of electronic data processing equipment. This will be used for customer billing and accounting, material and supplies accounting and control, payroll preparation and distribution, engineering studies, etc. The company expects not only to realize substantial economies, but also to produce valuable information and statistics not easily obtainable with mechanical accounting equipment. However, it will take about three years to convert operations fully to the new equipment.

The AEP System is actively developing electronic data processing for accounting, billing, etc. The cost of one new computer system has already been recovered, mainly by shortening the period between meter reading and mailing of customers' bills. In the engineering field the use of digital computers is also increasing rapidly in many phases of power production and transmission.

New Construction

THE 1957 reports did not indicate any real contraction in the big construction program of the electric utilities for 1957-59, although a few cases have come to light where the last of a series of planned units has been set forward a few months in 1960.

Hydro projects. Pacific Power & Light's report describes the company's huge construction program designed to double its plant capacity and thus replace a substantial amount of power now purchased from federal agencies. The revised plans for the Pacific Northwest Power project, in which Pacific has a one-fourth interest, are also described. Portland General Electric has now completed its 120,000-kilowatt Pelton project, and expects to buy power from the Rocky Reach, Priest Rapids, and Wanapum developments. Puget Sound P&L's report described the 775,000-kilowatt Rocky Reach hydro project financed late last year by the Chelan PUD, and the 100,000-kilowatt Priest Rapids project being developed by Grant County PUD, from both of which the company will take substantial power. Washington Water Power is making good progress with its 400,000-kilowatt Noxon Rapids hydro project. Idaho Power's Brownlee plant is expected to be completed this year, and work is starting on Oxbow, with the third "Hell's Canyon" unit to follow.

REGARDING the Central Valley power project in California, the proposal for joint development of Trinity river power resources by the United States and Pacific Gas and Electric is still pending in Congress, although the original project was authorized in 1955. Such joint development would save the government huge amounts and bring in large tax returns, but of course public power advocates would prefer an all-federal development.

Progress continues with the two big hydro projects of the New York State

Power Authority. Power from the St. Lawrence development should be available late this year, and from the Niagara river project by 1962, unless further delayed by local difficulties.

ATOMIC POWER PLANTS. After delays of a year or two resulting from difficulties with labor unions and elaboration of safety devices, the major atomic reactor plants are now getting under way. Commonwealth Edison reports that major construction work on the 180,000-kilowatt Dresden station in Illinois began last June. Detroit Edison's report shows a photograph of construction at the Fermi plant, with the dome already in place. Construction has begun on the Yankee plant in Massachusetts, which may be completed by mid-1959. Con Edison's Indian Point plant has been slowed by major changes in design, but contracts have been let for the structure and most of the equipment. South Carolina E&G's report describes the $20 million pressure tube prototype reactor (using heavy water and enriched uranium) sponsored by itself, Carolina P&L, Duke Power, and Virginia E&P; the plant would be completed by 1962. Pennsylvania P&L has proposed a large plant which would be the first to use the aqueous homogeneous reactor principle, but has requested $31 million from the AEC for research and development, which has come in for some criticism.

American Electric Power's report describes its interest in the plans of the East Central Nuclear Group (consisting of three AEP subsidiaries and eleven other companies) to develop a Florida plant.

RECENT FINANCIAL DATA ON GAS UTILITY STOCKS

Annual Rev. (Mill.)			*5/28/58 Price About*	*Dividend Rate*	*Approx. Yield*	*Recent Share Earnings*	*% Increase*	*Aver. Incr. In Sh. Earns. 1952-57(a)*	*Price-Earn. Ratio*	*Div. Payout*	*Approx. Common Stock Equity*
		Pipelines and Integrated Companies									
$ 5	O	Ala.-Tenn. Nat. Gas	23	$1.20	5.2%	$1.66Ma	21%	13%	13.9	72%	41%
192	S	American Nat. Gas	61	2.60	4.3	4.14Ma	7	12	14.7	63	33
58	A	Arkansas Louis. Gas	32	1.20	3.8	1.85De	19	47	17.3	65	52
57	O	Colo. Interstate Gas	42	1.25	3.0	2.26De	18	—	18.6	55	23
376	S	Columbia Gas System ...	19	1.00	5.3	1.44Ma	3	12	13.2	70	44
7	O	Commonwealth Gas	6½	—	—	.40De	D26	0	16.3	—	77
17	O	Commonwealth N. G. ...	39	1.80	4.6	3.39Ma	18	—	11.5	53	43
11	S	Consol. Gas Util.	17	.90	5.3	1.66Ja	D2	6	10.2	54	60
280	S	Consol. Nat. Gas	48	2.00	4.2	3.58Ma	NC	12	13.4	56	61
18	O	E. Tenn. Nat. Gas	10	.60	6.0	.89Ma	6	—	11.2	67	20
301	S	El Paso Nat. Gas	32	1.30	4.1	2.39De	13	12	13.4	54	20
46	S	Equitable Gas	32	1.60	5.0	2.23Ma	D2	4	14.3	72	42
24	O	Gulf Interstate Gas	14	.50	3.6	.85De	10	—	16.5	59	21
27	O	Houston N.G.	25	.80	3.2	1.72Ja	36	8	14.5	47	27
20	O	Kansas-Nebr. Nat. Gas .	36	1.80(f)	5.0	2.55Ma	9	12	14.1	71	32
104	S	Lone Star Gas	37	1.80	4.9	2.48Ma	12	10	14.9	73	43
75	S	Miss. River Fuel	31	1.60	5.2	2.00De	D14	2	15.5	80	49
26	S	Montana Dakota Util. ..	27	1.00	3.7	1.55Ma	9	12	17.4	65	31
25	O	Mountain Fuel Supply ..	26	1.20	4.6	1.72De	4	8	15.1	70	62
86	S	National Fuel Gas	20	1.10	5.5	1.39Ma	D17	—	14.4	79	58
129	S	Northern Nat. Gas	29	1.40	4.8	1.68Ma	D8	7	17.3	83	34
43	S	Oklahoma Nat. Gas	31	1.50	4.8	2.09Ma	9	6	14.8	72	34
117	S	Panhandle East P. L. ...	47	1.80	3.8	2.74De	—	2	17.2	66	41
13	O	Pennsylvania Gas	23	1.20	5.2	2.18De	D3	4	10.6	55	59
174	S	Peoples G. L. & Coke ...	49	2.00	4.1	3.07Ma	7	7	16.0	65	39
101	S	Southern Nat. Gas	38	2.00	5.3	2.13Ma	D1	4	17.8	94	46
38	O	Southern Union Gas	28	1.12	4.0	1.53De	—	10	18.3	73	31
313	S	Tenn. Gas Trans.	28	1.40	5.0	1.92Ma	28	10	14.6	73	19
175	O	Texas East. Trans.	28	1.40	5.0	2.65Ma	46	25	10.6	53	20

Annual Rev. (Mill.)		(Continued)	5/28/58 Price About	Dividend Rate	Approx. Yield	Recent Share Earnings	% Increase	Aver. Incr. In Sh. Earns. 1952-57(a)	Price-Earn. Ratio	Div. Payout	Approx. Common Stock Equity
96	O	Texas Gas Trans.	23	1.00(b)	4.3	2.07Ma	D1	16	11.1	48	27
97	O	Transcont. Gas P. L. ...	21	1.00(b)	4.8	1.36De	13	29	15.4	74	21
300	S	United Gas Corp.	32	1.50	4.7	2.52Ma	4	12	12.7	60	42
		Averages			4.6%				14.6	66%	
		Retail Distributors									
28	S	Alabama Gas	32	$1.60	5.0%	$2.86Ma	36%	15%	11.2	56%	42%
44	O	Atlanta Gas Light	33	1.60	4.8	2.48F	25	5	13.3	65	33
2	O	Berkshire Gas	15	1.00	6.7	1.20F	D21	53	12.5	83	36
6	O	Bridgeport Gas	28	1.60	5.7	1.93Ma	D27	1	14.5	83	50
5	O	Brockton-Taunton Gas ..	16	.90	5.6	1.18De	D8	43	13.6	76	41
70	S	Brooklyn Union Gas	43	2.20	5.1	2.92De	4	13	14.7	68	42
4	O	Cascade Nat. Gas	5	—	—	Def.De	—	—	—	—	18
39	O	Central Elec. & Gas	19	1.00	5.3	1.65Ma	13	15	11.5	61	18
13	O	Cent. Indiana Gas	15	.80	5.3	1.10Ma	4	7	13.6	73	67
5	O	Chattanooga Gas	5½	.30	5.5	.55F	44	14	10.0	55	46
66	O	Gas Service	27	1.36	5.0	2.31De	20	7	11.7	59	35
8	O	Hartford Gas	38	2.00	5.3	1.89De	D37	0	20.1	106	37
3	O	Haverhill Gas	20	1.32	6.6	1.90Ap	D7	20	10.5	69	58
18	O	Indiana Gas & Water ...	22	1.00(b)	4.5	1.54Ap	2	11	14.3	65	47
48	S	Laclede Gas	18	.90	5.0	1.37Ma	23	7	13.1	66	33
5	O	Michigan Gas Util.	19	1.05	5.5	1.37Ma	1	18	13.9	77	34
5	O	Midsouth Gas	12	.57	4.8	.65Ap	4	6	18.5	88	39
43	O	Minneapolis Gas	27	1.45	5.4	1.94Ma	D6	12	13.9	75	42
15	O	Miss. Valley Gas	21	1.20	5.7	2.20Ma	76	14	9.5	55	33
5	O	Mobile Gas Service	20	1.00	5.0	1.84Ma	80	0	10.9	54	35
7	O	New Haven Gas	33	1.80	5.5	2.36De	4	0	14.0	76	68
13	O	New Jersey Nat. Gas ...	32	1.40	4.4	2.69Ma	14	—	11.9	52	35
80	O	No. Illinois Gas	21	.88	4.2	1.41Ma	5	—	14.9	62	54
9	O	North Penn Gas	11	.60	5.5	.78De	D23	8	14.1	77	58
16	O	Northwest Nat. Gas	16	.72	4.5	1.06Ma*	D18	4	15.1	68	39
240	S	Pacific Lighting	45	2.00	4.4	2.67Ma	5	0	16.9	75	35
22	O	Pioneer Nat. Gas	28	1.40	5.0	2.13De	5	13	13.1	66	36
2	O	Portland Gas Lt.	10	.50	5.0	1.50Ma	127	0	6.7	33	25
9	A	Providence Gas	10	.56	5.6	.56De	D10	13	17.9	100	50
3	A	Rio Grande Valley Gas ..	3	.15	5.0	.24De	D14	8	12.5	63	52
5	O	So. Atlantic Gas	14	.80	5.7	.96Se	D9	5	14.6	83	34
12	O	So. Jersey Gas	32	1.50(b)	4.7	2.18Ma	14	24	14.7	69	47
29	S	United Gas Impr.	41	2.00	4.9	2.47De	1	5	16.6	81	64
51	S	Wash. Gas Light	42	2.00	4.8	3.05Ma	D3	2	13.8	66	41
11	O	Wash. Nat. Gas	14	(g)	—	.45Ma	30	—	—	—	41
8	O	Western Ky. Gas	13	.60	4.6	.88De	D10	4	14.8	68	38
		Averages			5.2%				13.6	72%	

RECENT FINANCIAL DATA ON TELEPHONE, TRANSIT, AND WATER STOCKS

Annual Rev. (Mill.)			5/28/58 Price About	Dividend Rate	Approx. Yield	Recent Share Earnings	% Increase	Aver. Incr. In Sh. Earns. 1952-57(a)	Price-Earn. Ratio	Div. Payout	Approx. Common Stock Equity
		Communications Companies									
		Bell System									
$6,313	S	Amer. T. & T. (Cons.) ..	178	$9.00	5.1%	$13.00F*	D1%	3%	13.7	69%	64%
303	A	Bell Tel. of Canada	42	2.00	4.8	2.00De	D11	0	21.0	100	66
46	O	Cin. & Sub. Bell Tel. ...	84	4.50	5.4	4.93De	D12	1	17.0	91	100
232	A	Mountain Sts. T. & T. ...	127	6.60	5.2	8.32De	D8	3	15.3	79	73
324	A	New England T. & T. ..	146	8.00	5.5	8.16Ma	D2	2	17.9	98	55
864	S	Pacific T. & T.	131	7.00	5.3	7.50F	D14	1	17.5	93	59
108	O	So. New Eng. Tel.	38	2.00	5.3	1.90De	D13	—	20.0	105	64
		Averages			5.2%				17.5	91%	

Annual Rev. (Mill.)		(Continued)	5/28/58 Price About	Dividend Rate	Approx. Yield	Recent Share Earnings	% Increase	Aver. Incr. In Sh. Earns. 1952-57 (a)	Price-Earn. Ratio	Div. Pay-out	Approx. Common Stock Equity
		Independents									
5	O	Anglo-Canadian Tel.	31	$1.20	3.9%	$3.23Ma	1%	56%	9.6	37%	55%
41	O	British Col. Tel.	41	2.00	4.9	2.45Ma	D14	5	16.7	82	31
4	O	Calif. Inter. Tel.	13	.70	5.4	.78De	D2	—	16.6	90	24
18	O	Calif. Water & Tel.	22	1.20	5.5	1.32De	D13	—	16.7	91	48
18	O	Central Telephone	22	1.00(b)	4.5	1.99De	—	10	11.1	50	28
5	O	Commonwealth Tel.	17	.90	5.3	1.44De	23	—	11.8	63	37
4	O	Florida Telephone	22	.90	4.1	1.07De	24	1	20.6	84	46
289	S	General Telephone	47	2.00	4.3	3.01Ma	NC	32	15.6	66	34
16	O	Hawaiian Telephone	18	1.00	5.6	1.11Ma*	D15	7	16.2	90	38
7	O	Inter-Mountain Tel.	15	.80	5.3	.94De	17	2	16.0	85	63
21	O	Rochester Tel.	21	1.00	4.8	1.23Ma	D21	0	17.1	81	39
4	O	Southeastern Tel.	19	.90	4.7	1.11De	D21	—	17.1	81	54
10	O	Southwestern St. Tel. ...	22	1.20	5.5	1.66De	5	4	13.3	72	35
10	O	Tel. Service of Ohio	115	1.40(b)	1.2	6.95Se	NC	NA	16.5	20	NA
34	O	United Utilities	24	1.25	5.2	1.54De	D6	1	15.6	81	40
15	O	West Coast Tel.	20	1.00	5.0	1.36Ma	D1	4	14.7	74	35
260	S	Western Union Tel.	20	1.20	6.0	2.03De	D8	—	9.9	59	85
		Averages			4.8%				15.0	69%	
		Transit Companies									
21	O	Baltimore Transit	6	—	—	$1.01De	124%	—	5.9	—	41%
12	O	Cincinnati Transit	5	$ .30	6.0%	.52De	9	0%	9.6	58%	49
65	S	Fifth Ave. Coach	18	2.50(c)	13.9(c)	2.46De	D29	0	7.3	102	68
308	S	Greyhound Corp.	16	1.00	6.3	1.22De	D4	0	13.1	82	45
25	S	Nat. City Lines	22	2.00	9.1	2.74De	12	9	8.0	73	94
13	O	Niagara Frontier Trans..	8	.60	7.5	.77De	35	0	10.4	78	78
65	O	Phila. Trans.	6½	.60	9.2	1.23De	D25	—	5.3	49	38
17	A	Pittsburgh Rys.	6	.50	8.3	Deficit	—	—	—	—	90
6	O	Rochester Transit	5	.40	8.0	.64De	D6	29	7.8	63	100
22	O	St. Louis P. S.	8	1.00	12.5	.57De	D17	19	14.0	175	94
15	S	Twin City R. T.	12½	1.80	14.4	1.01De	D16	D	12.4	178	53
21	O	United Transit	5	.60	12.0	.87Ma	D1	11	5.7	69	51
		Averages			9.7%				9.0	88%	
		Water Companies									
		Holding Companies									
43	S	American Water Works .	14	$ .60	4.3%	$ .95Ma	D3%	5%	14.7	63%	17%
		Operating Companies									
5	O	Bridgeport Hydraulic ...	31	$1.70(f)	5.5%	$2.05De	D2%	5%	15.1	83%	53%
15	O	Calif. Water Service ...	45	2.40	5.3	3.20Ap	1	6	14.1	75	33
4	O	Elizabethtown Water ...	41	2.00	4.9	3.90De	19	30	10.5	51	58
11	S	Hackensack Water	44	2.00	4.5	3.18De	11	6	13.8	63	38
8	O	Indianapolis Water	22	1.00	4.5	1.26De	D11	0	17.5	79	35
6	O	Jamaica Water	35	2.00	5.7	2.96(a)Ma	3	0	11.8	68	26
5	O	New Haven Water	62	3.40	5.5	2.30De	D20	0	27.0	148	61
2	O	Ohio Water Service	27	1.50(b)	5.6	2.32Ma	D1	10	11.6	65	32
8	O	Phila. & Sub. Water	35	.50(b)	1.4	3.00Ma	D3	7	11.7	17	28
2	O	Plainfield Union Wtr. ..	58	3.00	5.2	4.42De	D12	2	13.1	68	37
4	O	San Jose Water	50	2.80(f)	5.6	3.34Ap	D6	9	15.0	84	42
10	O	Scranton-Springbrook ...	20	1.00	5.0	1.54De	8	7	13.0	65	29
5	O	South. Calif. Water	17	.80	4.7	1.17Ma	D2	12	14.5	68	31
4	O	W. Va. Water Service ..	22	.68(d)	3.1	1.75Ma	5	9	12.6	39	17
		Averages.....			4.8%				14.4	69%	

A—American Stock Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. Ja—January; F—February; Ma—March; Ap—April; My—May; Je—June; Jy—July; Au—August; Se—September; Oc—October; N—November; De—December. NC—Not comparable. NA—Not available. D—Decrease. *On average shares. (a)—Adjusted to eliminate 15 cents per share of nonrecurring tax savings. (b)—Also stock dividend in 1957. (c)—Company took no action on dividend payable for the first quarter of 1958, but declared 50 cents applicable for year 1957, as a year-end extra. (d)—Also 1 per cent stock dividend quarterly. (e)—Also 10 per cent stock dividend May 19, 1958. (f)—Includes extras (g)—Also 4 per cent stock dividend June 6, 1958.

What Others Think

A State Commissioner Reviews A Utility Case History

IN an address to supervisory employees of Arkansas Power & Light Company in February, 1958, Lewis M. Robinson, chairman of the Arkansas Public Service Commission, traced the growth of the Arkansas Power & Light Company as part of the picture of the development of natural monopolies and regulation in the public utility field. He also touched briefly on some of the aspects of public relations and the future of private electric utilities.

Monopolies and Regulation Are Normalities

Commissioner Robinson views utility monopolies as natural institutions in our free economy. He puts it this way:

> . . . monopolies are the normal and natural growth of our free enterprise, capitalistic economy and regulation is the normal and natural growth of the democratic process of government . . . regulatory agencies must maintain the proper regulatory climate so that the utilities may function at their best.

He went on to say that for many years the administrative duties of our government were simple and light, but as our agricultural economy changed into a commercial and industrial economy, the administrative duties mushroomed so that executive, judicial, and legislative departments of our government could not cope with them. This resulted in the creation of numerous administrative agencies. Chairman Robinson stated:

> . . . The Arkansas Public Service Commission is such an agency with quasi-judicial powers. . . . [It] is the administrative agency created by the legislature and given authority to regulate the operation of private electric utilities. We are the eyes, ears, and voice of the legislature. We investigate to discover evidence, we listen to determine facts, we speak for the legislature in the approval or disapproval of the plan of organization of utilities, the issuance of stocks and bonds, and other evidence of debt. We determine the value of utility property, we determine the standards of services, and we determine the rates you charge for your commodity and your services.
>
> We grant or deny certificates of convenience and necessity to construct new facilities. We try to do these things in such a way that it will be to the best interest of the stockholders, the creditors of the company, the customers of the company, and the public. This is very difficult unless all involved are will-

ing to recognize the rights of others. You may say that a utility cannot be regulated in such a way as to be to the best interests of the stockholders, creditors, customers, and the public, because they have conflicting interests. You may say that the company is entitled to get all it can for its commodity and services. The customer may say that he is entitled to pay as little as possible.

COMMISSIONER Robinson said he believes that a utility is entitled to rates that will yield a reasonable rate of return on investment and enable it to maintain a high standard of service. He thinks the customer should pay a rate that will be adequate enough so that the utility can earn a reasonable return and provide high caliber service for the customer. Everyone is better off under this kind of regulation in the opinion of the commissioner. He stated:

> A regulatory body that does not fix rates that are fair and equitable is not performing the service that the legislature intended that it should perform. . . . it is my belief that the regulatory agency is the agency that creates the climate in our economy in which the utilities can best hold the confidence of the people.

Public Relations

ASKING the question, What can employees do to help their public utility company grow and prosper?, Commissioner Robinson answers it this way:

> There is nothing in the field of regulation that affects efficient and equitable regulation as does the public relations of a utility. You are the people that can create a good public relations or bad public relations. What the customers of Arkansas Power & Light Company think of you is what they think of the Arkansas Power & Light Company.
>
> You and those you supervise are Arkansas Power & Light Company contacts with the customers. You are the ones who answer the questions, and the first ones who hear the complaints. If the questions are answered truthfully and courteously the customer will be satisfied, but if your attitude is bad or indifferent, you are not the one who gets the blame; it is the company. We at the commission do not like complaints any better than you do, but I have repeatedly said that I wish all the complaints concerning utility service would come to us. The commission staff has been successful in servicing utility complaints in such a way as to leave the customer in a good frame of mind towards the utility. You can and should do the same. . . .
>
> Customers' complaints unserviced develop the soil in which propaganda for public ownership takes root best, and it is also the basis for the introduction of 90 per cent of the punitive legislation against utilities in the legislature.

Growth of Arkansas Power & Light Company

COMMISSIONER Robinson related these details about the development of the Arkansas Power & Light Company:

> . . . Let's begin with 1927—thirty years ago—Arkansas Power & Light Company had a plant investment of $4,841,000. Gross revenues of $4,919,000. Arkansas Power & Light Company had 52,324 customers who paid 11.9 cents per kilowatt-hour for the first 200 kilowatt-hours of electricity under the company's residential tariff. In 1927 the gross income of the company averaged $94 per customer.

Detailing how the company grew slowly at first and survived five rugged depression years during the early thirties, Robinson emphasized that it took courage and faith on the part of investors and management to continue building facilities in a company at a time when revenues and customers were diminishing. But the vision and fortitude of both were justified because, "In 1935 the worst of the depression had passed; the investment [of Arkansas Power & Light Company] rose to $24,625,000. The revenues increased for the first time in four years to $6,193,000 and an increase of customers from 55,147 to 61,119 took place—the first customer increase enjoyed in four years." He said:

The company's growth from 1935 has been phenomenal. It has had an annual increase in invested capital, gross revenues, and customers, all through the war years of World War II when there were shortages of everything it takes to build a utility plant. But notwithstanding this fact, the company's investment rose to $69 million in 1947—its revenues to $17,776,000 and the number of customers to 167,879.

In 1956 the plant investment of Arkansas Power & Light Company was $242,929,000—the company's revenues were $43,407,000 and it had 277,000 customers, Robinson said.

Deferred Utility Billing

With the idea of reducing expenses, utilities have tried various plans of staggered meter reading and billing. Meter readings are obtained bimonthly, quarterly, and, in some cases, twice a year. Billings are prepared based on estimated reading with adjustments at the actual reading period, or the customer is billed an agreed or estimated amount of money for the intervening periods and then is either credited when he has overpaid, or charged the additional amount when a reading is obtained and an actual bill calculated.

Where adjustments have to be made on the customer's bill, due to over or underbilling, it is found that public relations suffer as it results in a high percentage of dissatisfied customers, even after time-consuming explanations.

Another plan has been to bill the customer for straight 60-day or 90-day periods with no intervening bill. This means that the customer receives a large bill which often puts a strain upon his budget and results in credit and collection problems for the company. In other words, it is easier on the average customer if he receives and pays his bill each month.

Most of the staggered reading and billing plans have been abandoned by those companies which have tried them. However, the amount of money involved in meter reading and billing expense justifies continued study. A new angle from which the savings of staggered reading and billing may be considered is the deferred billing plan. For example, to benefit from the savings of a 60-day reading, a customer's meter is read every two months but the customer is billed for one-half the actual consumption on two consecutive bills at 30-day intervals. This automatically eliminates an adjustment for inaccurately estimated consumptions or over and underpayments with the resultant complaints. The customer receives a bill based on actual readings every thirty days, which helps him keep his

	April	*May*	*June*	*July*	*August*	*September*
Meter Read	R		R		R	
Kwh. Used	1,000		1,200		840	
Kwh. Billed	500	500	600	600	420	420
Date Read	5		5		5	
Date Mailed	10	10	10	10	10	10
Date Due	15	15	15	15	15	15
Notice Mailed	20	20	20	20	20	20
Cutoffs	26	26	26	26	26	26

budget in order and reduces the collection and credit problems.

THE table above shows how a customer's meter is read and billed over a period of time and how the collection policy is applied.

Sixty days must elapse for the initial billing, in which time the customer receives no bill and thereafter the company carries a 30-day billing. At termination of service, the customer's final bill includes all deferred billing and in the case of short-term or transient customers, consideration must be given to the collection of an adequate deposit. One objection to the deferred billing plan is found in the adjustment which must be included in the customer's final bill. The potential loss incurred on final bills and short-term accounts against the economy of deferred billing is one of the factors that must be considered to determine the feasibility of application. To avoid distortion of the revenue picture, deferred billing must be adapted to a percentage of customers each month over an extended period of time.

Although several billing plans can be used with the deferred billing idea, the following is possibly the best: At the billing period the customer is issued a bill giving the prior meter-reading date, the present date, the reading, the 60-day consumption, and the total billing. Then, one-half the billing is shown in a separate figure with the date due. Upon receipt of the bill the customer may pay the entire 60-day bill, if he chooses, but he must pay one-half of it by the due date shown.

AT the time the above bill is prepared by the billing department, the bill which is to be mailed for the next period is also made and placed in a suspense file. This bill shows only the total billing, the amount due at the "first" billing period, and the amount due for the "second" period with the due dates. The actual meter-reading dates, the meter readings, and kilowatt-hour consumption have already been presented on the "first" bill and are not repeated. On the day the "second" period bill is mailed, the billing clerk has only to check the "second" period bill against her accounts receivable record and indicate whether the "first" bill has been paid to prepare the customer's bill. In preparing delinquent reports and statements, the "second" billing is not included, for even though the billing is in accounts receivable, the customer, in theory, has not been billed.

The deferred meter-reading and billing plan must be varied to fit each company's requirements and policies, but it may afford the means by which the utility can benefit from the economy of the staggered reading and billing while eliminating the difficulties inherent in estimated readings or extended billing periods.

—W. R. BRADFORD,
Salisbury, Maryland.

Mightiest Power Builder on Earth

IN the May issue of *Reader's Digest* Wolfgang Langewiesche takes a quick, objective look at the Columbia river and its string of dams, biggest power river on earth. He appraises the fruits of the water-power development from an agricultural viewpoint, then delves swiftly into the how's and why's of the "system's" operation.

He states:

> . . . This is a TVA without the A. No central all-wise authority runs the development. Some dams are private enterprise; some are U. S. government; some belong to cities; some to "public utility districts," which means essentially counties. The development runs by argument, hearings, quarrels, lawsuits, compromise. . . . And beneath the surface there is a life-and-death struggle between public power and private power.

This vast river "complex" is kept functioning with efficiency by what is called the "Northwest Power Pool." Although no official organization, the "pool" manages, through interchange of power among the dams, to derive maximum generation capacity from available water power.

This is made possible by a four-state grid of high-tension lines connecting all dams.

The article points out that the Columbia, like most rivers, has an abundance of water in the spring and early summer, but is at low ebb at other times when demand for power is great. A series of dams, backed up by reservoirs, enables the system to build up water surpluses when it is plentiful and to utilize the water when the river's supply diminishes. At such low-water periods, the dams upstream release water and each dam lower on the river benefits by it.

Naturally these "downstream benefits" are worth money. Lower dams must pay upstream dams for this "bonus" water they provide them in the low-water seasons.

The federal government dams, of course, pay nothing since the government claims title to the river and all improvements added to it. Langewiesche points out:

> . . . Now the good dam sites are all taken up, or spoken for. And dam building becomes more expensive as the country develops. Sometime after 1970, building of dams will have become so expensive that it will be more economic to add steam power plants, possibly with atomic heat. . . .

STEAM must be used at a steady pace to be economical. Water power, however, can be turned on or off without waste. By teaming the two forms of generation, normal current consumption needs can be taken care of and abnormal "peak" consumption can be handled simply by adding extra amounts of water power to provide the extra kilowatts required.

When the Columbia river development converts to this dual steam-hydro operation, it will be able to produce more power at each dam than it does now because it will conserve its water power for short-period, "peak" use.

WHAT OTHERS THINK

Notes on Recent Publications

A TIMELY and penetrating study, released April 18th by Gregory & Sons, members of the New York Stock Exchange, analyzes the strong position of the electric utility industry in the face of any industrial recession. The comprehensive 59-page study, entitled "The Impact of Industrial Recession on Electric Utility Companies," was prepared by J. Walter Leason, manager of research for the New York investment firm.

Mr. Leason not only reviews the strong showing made by the industry during the 1954 and 1949 recessions, but projects the probable effects of 10 per cent, 20 per cent, and 30 per cent declines in industrial power sales for more than 100 individual companies.

The hypothetical declines are related in each case to figures derived from profitability of 1956 industrial sales and are then projected on a per share as well as a per cent basis to show the estimated effect on latest earnings per share.

In sections devoted to the past growth and probable future gains of the industry, the study concludes that any moderate decline in industrial kilowatt-hour sales would be completely offset in most companies by continuing gains in residential and commercial sales. Mr. Leason also points out that changing business conditions normally have little effect on residential, commercial, and other power sales. This, coupled with the facts that electricity has become an indispensable part of daily living and the industry has been increasing revenues while decreasing its rates at the same time, assures steady and substantial residential sales growth.

In ordinary uses, the study notes, the average cost of electricity is only 2.56 cents per kilowatt-hour. For example, it costs only 83 cents to operate a refrigerator for a month, 66 cents for a television set, and 11 cents for an automatic washing machine.

In another deeply analytical section, Mr. Leason presents calculations to show the average revenue per industrial kilowatt-hour sold; the switchboard cost of power; and indicated profit margin for each of the companies studied. These are presented on an out-of-pocket cash basis per industrial kilowatt-hour and show considerable variation among the companies covered in size and profitability of industrial business.

While sales to industrial customers normally show the greatest sensitivity to business conditions, residential and commercial classifications carry far wider profit margins and are able to cover by far the major portion of a utility's fixed expenses. Conversely, the industrial load produces the high volume necessary to lower costs and in itself necessarily operates on a relatively low profit margin.

The study also notes that while the electric utility industry is often considered a stable or defensive industry, it can also be accurately described as a growth industry. By controlling its costs and offering service at low rates, Mr. Leason states, the industry has provided its investors with a combination of safety of principal and gradually rising dividends.

THE IMPACT OF INDUSTRIAL RECESSION ON ELECTRIC UTILITY COMPANIES, by J. Walter Leason, published by Gregory & Sons, New York, New York, 1958. Price, $25.

"PLANNING YOUR FUTURE IN CONNECTICUT INDUSTRY" is the title of a 36-page booklet recently published under the joint sponsorship of major electrical utilities of Connecticut. Its purpose is to present career guidance facts to youth about the opportunities the industrial world has to offer.

With articles by people actively engaged in specific jobs, the booklet attempts to intrigue the interest of future job seekers. Almost all the state's public and parochial high schools are using this booklet as a teaching tool, we are told. The project, an educational service to the public, is financed by The Connecticut Light & Power Company, The Hartford Electric Light Company, The Housatonic Public Service Company, and The United Illuminating Company. More "power" to them and to the communities they serve.

The March of Events

Atomic Plant Approved

CONSTRUCTION of a $43,883,000 nuclear power plant at Parr Shoals, South Carolina, by the Carolinas-Virginia Nuclear Power Associates was approved recently by the House-Senate Committee on Atomic Energy.

The associates include Duke Power Company, Charlotte, North Carolina; South Carolina Electric & Gas Company, Columbia, South Carolina; Carolina Power & Light Company, Raleigh, North Carolina; and the Virginia Electric & Power Company, Richmond, Virginia.

Under an agreement approved earlier by the Atomic Energy Commission, the associates are to pay capital costs for construction totaling $29,228,000 and any additional construction costs that may be encountered. The commission will provide $14,655,000 for research and development programs and waive the value of fuel use charges for the first five years of plant operation.

Arkansas

Gold Medallions to Be Awarded Builders

A STATEWIDE Live Better Electrically Medallion Home Program, designed to establish a yardstick of excellence in electric living for Arkansas' homes was announced in Little Rock recently by W. M. Shepherd, vice president of Arkansas Power & Light Company.

Speaking before 150 home builders and allied businessmen at the LaFayette hotel, Shepherd said this marked the first time in history that "our industry has established a national hallmark of excellence in electrical living for builders of new homes.

"Key element in the program is a 3-inch metal Medallion which, when permanently attached to the home, certifies that it meets basic requirements of lighting, wiring, and electrical appliances."

Shepherd said that all builders in AP&L's service area would qualify for the new program.

California

First Bay Transit Chief Named

THE Bay Area Rapid Transit District chose State Finance Director John M. Peirce as its $32,500-a-year general manager recently and adopted a budget that will mean a five-county tax levy of slightly less than two cents.

The budget, totaling $715,142, will pay for engineering and financial planning of the district's proposed dream system of high-speed commuter trains, during the fiscal year starting July 1st.

Director Thorpe J. DeLasaux of Marin county said the necessary property tax will be approximately 1.9 cents per $100 assessed valuation—based on a $4 billion valuation in the five counties of the district—Marin, Alameda, Contra Costa, San Francisco, and San Mateo.

Peirce has been the state's top cabinet officer in both pay and power since the early days of the Governor Goodwin J. Knight administration.

Florida

Rules on Utility Tax Issue

FLORIDA'S attorney general held last month that the land, buildings, and equipment of a power plant under construction by the Orlando Utilities Commission in Brevard county cannot be taxed.

The attorney general advised the state comptroller, however, that Brevard county property owned by the Orlando Utilities Commission which is not actually used for the power plant may be taxed. He said that the Orlando Utilities Commission is an agency of the city of Orlando and cannot be taxed on properties used exclusively for a municipal purpose. He said location of the property made no difference.

The fact that the power station site had not been activated by January 1, 1958, the attorney general said, did not remove its tax exemption since it was intended for a municipal purpose.

Illinois

Gas Users' Rates Rise

PEOPLES GAS LIGHT & COKE COMPANY customers, as the result of an increase in rates permitted last month for two of the utility's suppliers, will pay higher gas bills starting June 21st. The boost to Peoples Gas and to its customers is subject to review and possible refund.

A company spokesman said that the increase to the average householder would amount to about 14 cents a month, including space heating and other uses.

It was estimated that for cooking purposes only additional cost of gas for the average customer will be less than 2 cents a month.

The Federal Power Commission permitted rate increases filed April 1st by the two Peoples Gas subsidiary pipeline companies to become effective last month. The subsidiaries are Natural Gas Pipeline Company of America and Texas Illinois Natural Gas Pipeline Company. The April 1st filing by the two pipeline companies was substituted for one of last November 21st which requested a larger increase.

Indiana

Nonmembers Can Be Made To Pay Fee

EMPLOYEES can be compelled by contract to pay the equivalent of union dues even though they cannot be required to join a union, a superior court judge ruled last month.

Judge Joseph V. Stodola denied a petition by the Meade Electric Company of Hammond, Indiana, for an injunction

against the International Brotherhood of Electrical Workers.

The company sought to prevent the IBEW from including in a proposed contract a clause requiring nonmembers to "pay the union an amount of money equal to that paid by other employees in the bargaining unit who are members of the union."

Judge Stodola ruled the proposed clause does not violate the 1957 Indiana "right to work" law, which prohibits clauses making union membership a condition of employment. "This payment of the fair share of representation is completely distinct and substantially different from compulsory membership in a union," he said.

Iowa

Reach Power Pool Agreement

FIVE of Iowa's privately owned electric utilities have signed an agreement to pool their power-generating facilities. Companies included are Iowa Electric Light & Power; Iowa-Illinois Gas & Electric; Iowa Power & Light; Iowa Public Service; and Iowa Southern Utilities. If approved by the Federal Power Commission, the agreement would go into effect on July 1st.

Officials of the companies said the action would "promote industrial growth and cope more readily with power emergencies."

Montana

Seeks Higher Gas Rates

AN application for natural gas rate increases was filed with the state public service commission last month by the Great Falls Gas Company. The company said present residential gas rates have been in effect for more than seventeen years without change, industrial rates have not been changed in twenty years, commercial rates are twenty-six years old, and the Air Force's special rates are almost sixteen years old.

The proposed increases range from 7 cents a month for the lowest residential rate to $75 a year on the minimum commercial gas bill.

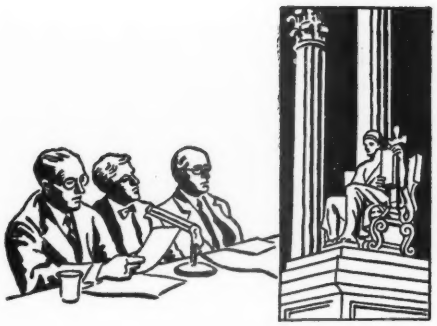
New York

Electric Rates Increased

THE state public service commission has accepted a tariff amendment filed by Rochester Gas & Electric Corporation designed to increase most of its electric rates, effective June 1st. It was estimated that the new tariff will produce about $2,450,000 additional annual revenue.

In seeking permission to increase its rates, the company told the commission that additional revenues are needed to enable it to meet higher operating expenses and to continue adequate service. The company provides electric service in four districts, three of which include Rochester, Canandaigua, and nearby portions of Monroe, Ontario, Wayne, and Cayuga counties. The fourth district includes those portions of Allegany, Livingston, and Wyoming counties which lie along the Genesee river.

Under its new tariff, minimum monthly charges for residential service, covering the first 12 kilowatt-hours of energy consumed, will be increased from 85 cents to $1.



Progress of Regulation

Trends and Topics

Construction Work in Progress

WHETHER or not construction work in progress should be included in a rate base has been presented as an issue in numerous rate cases. The generally accepted view seems to be that construction work in progress should be eliminated when interest during construction is allowed. Otherwise, there would be a duplication of revenue.

The North Dakota commission recently discussed this question in the Montana-Dakota Utilities Company case. The commission said it is established law in North Dakota, as well as generally, that for the purpose of showing actual operations, plant under construction may not be included in the rate base. The statute provides for inclusion of plant "used and useful." The commission referred to the fact that this question had been passed upon by the state supreme court (53 PUR NS 143; 39 PUR NS 219); and was established law (22 PUR3d 505).

Exclusion from Rate Base

Among the rulings on exclusion, we may note one in Massachusetts where, in fixing rates for a company which capitalized interest during construction and added such amount to its miscellaneous revenues, the commission decided that plant under construction should not be recognized unless there is simultaneous recognition of the economies in operating expense which will result when it is placed in service (2 PUR3d 464).

The New Mexico commission said that the consumer should not be required to underwrite the cost of plant not yet devoted to the public service. Interest charged construction was also deleted from operating revenues (8 PUR3d 176). The South Dakota commission, citing several authorities, ruled that plant under construction at the end of a test year period should not be included since the rate base should be correlated with revenues for the test period (20 PUR3d 385).

The Tennessee commission, excluding telephone plant under construction, said this was consistent with its practice in other telephone cases and that such

exclusion had been made by other regulatory agencies and upheld by the courts (12 PUR3d 170). The commission referred to decisions in Idaho (8 PUR3d 265), Oklahoma (89 PUR NS 311), Vermont (90 PUR NS 414), New Hampshire (78 PUR NS 67), Kentucky (94 PUR NS 383), Alabama (96 PUR NS 1), Florida (92 PUR NS 335).

Inclusion in Rate Base

Under special circumstances the Tennessee commission included construction work in progress. A telephone company had never capitalized interest, taxes, and insurance during construction. There was said to be no method by which an amount could be determined that normally would be included in a rate base. Moreover, it seemed likely that establishment of a rate base in the usual way might result in a higher figure (15 PUR3d 272).

The Colorado commission decided that telephone plant under construction should be allowed as part of the rate base provided that the related interest charged to construction is included as an addition to income in computing net operating earnings. It was evident that plant under construction would continue to be an item substantial in amount during a period of expansion (1 PUR3d 129). The Illinois commission, in fixing rates for a water company, included construction work in progress (12 PUR3d 257).

The Delaware commission decided that plant under construction, even though not income-producing, should be included in the rate base of a telephone company, but interest on such property for the test period should be included in revenues (21 PUR3d 417). The Virginia commission included plant under construction although there had been objection, stating that such proposals had been made and rejected previously and that the commission's action had been upheld by the courts (21 PUR3d 239). The Wyoming commission included necessary plant facilities under construction and to be completed and placed in service before the end of the year in which a rate increase was approved (7 PUR3d 161).

Reasons for Exclusion or Inclusion

Inclusion or exclusion of construction work in progress, under varying circumstances, is illustrated in several decisions in Arkansas. The commission, in fixing rates for Arkansas Louisiana Gas Company for its integrated system, used average figures for the test period and eliminated from the rate base a part of plant under construction. A compressor station was revenue-producing construction and was eliminated from "Construction Work in Progress." The commission concluded that gathering and transmission lines should be a part of the rate base where it had not been clearly established that they were revenue-producing properties. The commission staff had expressed the thought that the inclusion of revenue-producing construction in the rate base without recognizing the additional revenue to be derived from that plant was improper and would result in a duplicate return (7 PUR3d 594).

The commission, in fixing rates on this company's nonintegrated system,

used average figures for the test period and, in the absence of any objection by the company or the staff, included construction work in progress applicable to the nonintegrated system (7 PUR3d 561). In a later case, involving the same company, the commission eliminated construction work in progress because the company did not clearly establish that it was not revenue-producing construction (10 PUR3d 407).

The commission, in fixing rates for Arkansas Power & Light Company, noted that interest during construction is included as one of the components of construction costs. The company under investigation capitalized interest during construction and, in view of this, the commission decided that "Electric Plant under Construction" should be divided as to revenue producing and nonrevenue producing. Revenue-producing construction would become part of the rate base and interest during construction would be charged against the nonrevenue-producing items (13 PUR3d 1).

The Arkansas supreme court, affirming the commission's denial of a rate increase for Arkansas Power & Light Company, noted that the commission, in establishing the rate base, refused to allow the average amount over the test period that the power company had invested in "Work under Construction" and not revenue producing. The court said there was substantial evidence to support the findings and conclusions reached by the commission, under the broad powers granted to it, and that the commission in its actions did not invade the company's constitutional rights (14 PUR3d 38).

The District of Columbia commission included construction work in progress where an electric company was confronted with the need for continuing and permanently financing a large construction program. The commission said that, like the majority of regulatory authorities, it allowed a credit to income for interest during construction. The amount so accrued was treated as an additional element of construction cost. The cost of construction was not included in the rate base, however, until the property to which it was attributed was completed and placed in service. In 1948, the commission had accepted a recommendation that, in lieu of this procedure, investments for construction work in progress should be included in the rate base as and when they were made. A question had been raised as to the desirability of continuing this practice. The commission concluded that it should not require such a change at the time (8 PUR3d 76).

The Florida commission ruled that construction designed to reach new customers should not be included in the rate base unless consideration is also given to potential revenues and expenses. Construction work intended to replace worn or outmoded equipment should not be included since its inclusion would require the customer to pay a return on excess plant. Construction work designed to improve present service but not replacing old equipment should, however, be included (19 PUR3d 417).

Review of Current Cases

Reproduction Cost Not Dominant Factor in Rate Case

In the "most extensive rate case in its history" the Montana commission denied Mountain States Telephone & Telegraph Company's application for authority to increase rates. The company sought increases ranging from 25 to 58 per cent on rates for residence service and from 15 to 53 per cent on business service. Existing rates yielded a return of 5.56 per cent and the commission considered this reasonable.

Reproduction Cost

The company urged computation of the rate base by giving 70 per cent weight to reproduction cost new less depreciation and 30 per cent weight to original cost less depreciation. The commission could not agree with either the weighting used or the strictness of the method. Although agreeing that reproduction cost is an important factor in deciding value and, in many cases, the dominant one, the commission held that it is not the exclusive measure of value.

It held that it has wide latitude to decide what weight should be given to reproduction cost or other standards of value in each case. As long as the exercise of its discretion remains reasonable it may make determinations as the circumstances of the particular case dictate.

Weaknesses of Theories

The commission conceded that all theories of valuation have their weaknesses. It noted that the tremendous amount of judgment involved in determining reproduction cost in a sizable utility plant often results in wide disparities of appraisals. Furthermore, the reproduction cost theory could hurt ratepayers during inflationary periods and the investors during periods of deflation.

The commission's chief objection to the reproduction cost theory was that it assumed piecemeal reproduction of the existing plant whereas, in actuality, many items would not be reproduced if the company rebuilt its entire plant anew. Not only could the utility profit from its past mistakes by building its plant in one comprehensive project, but it could avoid the costly sporadic additions and improvements it was required to make to its facilities as the demand for service fluctuated in past years.

Furthermore, the company could take advantage of all the technological advances in equipment, modern design, and engineering methods. For example, such modern developments as microwave installations could make large parts of the existing plant unnecessary, and where such items would simply be eliminated in an actual reconstruction of the plant, the reproduction theory would carry them at their repriced cost.

Original Cost and Other Theories

The commission also noted weaknesses in other theories of valuation. For example, it pointed out that the reliability of the original cost theory depends largely upon the period in which the major portion of the plant was built. With a plant built in recent years, original cost less depreciation would accurately reflect value, whereas bare original cost would inflate the rate base since it would not allow for depreciation.

The invested capital theory also has shortcomings, since it has its moorings

in the company's investment rather than any measurement of physical property. Assessed value, standing alone, was not considered a good criterion of physical value either, although it was admitted that it should be considered.

The commission did examine each of the valuation figures, however, and considered all of the theories by which they were computed. After weighing these factors it found the present fair value of the company's intrastate plant was $40.5 million.

Items Disallowed

Certain adjustments were made to the fair value figure. For example, plant under construction and property held for future use were excluded from the rate base on the theory that the ratepayer should not be required to pay a return on an item of utility plant until it is placed into service. The governing statute specifies that the commission's valuation shall be of property "actually used and useful for the convenience of the public."

The commission made no allowance for working capital in view of the availability of tax accruals and prepayments from the customers by the means of advance billing for exchange service. The commission observed that the company has these funds, interest free, until the time for actual payment arrives and that these funds are available for the general conduct of the company's business.

Debt Ratio

After determining the cost of debt and equity capital, the commission considered the capital structure to which they should be applied. It pointed out that when the debt ratio is too low, the ratepayer is not only burdened with the higher cost of equity financing but is also denied the benefits of tax savings.

The company's actual debt ratio was about 28 per cent. However, the commission adopted a hypothetical debt ratio of 45 per cent as reasonable for the purpose of determining the cost of capital. It recognized that the composition of a capital structure is a matter for the utility's management to determine and that it has no authority to dictate what the debt ratio must be. It said, however, the burden of a low debt ratio should not be imposed upon the ratepayers. Therefore, it concluded that it was justified in fixing a return allowance on the basis of an assumed capital structure.

Attrition

The major point of the company's case was that increasing costs and expansion needs had reduced its earnings below the level of a fair return and that this trend would continue to erode its earnings. The commission believed that the record disproved the first contention and that the companion point had not been sustained. It noted that the company's building programs have been aimed at updating its plant and upgrading its service. It said that while there is considerable initial expense, programs such as microwave installation and conversion to dial exchanges should soon begin to bear the fruit of increased revenues and operating efficiencies. These developments, it believed, should offset anticipated increases in wages and other operating expenses.

Furthermore, the commission said, conditions have changed materially since the filing of the application. Federal Reserve Board actions have had their effect upon the money market and the so-called "tight money" conditions have been relaxed. A downward trend in the cost of capital has been indicated. In view of the uncertain economic conditions the commission believed it would be unsound to

attempt formulation of rates on the basis of what may or may not happen in the future.

Dissenting Opinion

Commissioner Middleton dissented first of all on the ground that reproduction cost should be given dominant consideration. He favored a formula of 50 per cent for reproduction cost new less depreciation, 25 per cent for original cost, and 25 per cent for original cost less depreciation. Secondly, Commissioner Middleton did not agree that the commission could adopt a hypothetical debt ratio. He believed that the majority's adoption of a hypothetical capital structure tended, in effect, to say that the company did not know how to operate its business and that its debt-equity ratio was wrong. Commissioner Middleton also disagreed with the majority's leaving out cash working capital from the company's rate base. *Re Mountain States Teleph. & Teleg. Co. Docket No. 4548, Order No. 2719, April 30, 1958.*

Rate Increase Granted after Consideration of Capital Costs, Intercompany Payments, and Rate Base

THE California commission granted the Pacific Telephone & Telegraph Company a $27.5 million rate increase estimated to yield a return of about 6.75 per cent. This action made permanent an interim rate increase in the Los Angeles area and gave the company some new increases. The increase was smaller than that requested by the company.

Return Requirements

In considering the company's return requirement, the commission noted that a balancing of investor and subscriber interests must be obtained. It said that it does not fix the return to be allowed on the basis of outstanding shares of common stock and the annual dividends paid on such shares.

The number of outstanding and issued shares of stock and the annual dividends paid reflect the exercise of the company's managerial judgment. This judgment, said the commission, is not to be substituted for its judgment in fixing rates. The commission did, however, consider evidence pertaining to security issues and earnings thereon. While it did consider the company's past financing success and its future prospects it also considered many other elements.

Working Capital

The company had included in its rate base working cash derived by taking one-twelfth of annual operating expenses. The commission rejected this claim, however, saying that the evidence in no way disclosed that such method derived an amount equivalent to that which investors had provided for the operation of the business, for which they were not otherwise compensated. It believed that the claimed working cash component of rate base was unsupported by any convincing evidence as to the company's requirement for such an allowance. The burden of proof in this respect was not met, according to the commission.

Intercompany Payments

Western Electric Company, an affiliate, manufactures and procures telephone equipment and materials for Pacific Telephone & Telegraph Company. The com-

mission reduced the claimed materials and supplies component of the rate base to the extent that costs of plant were in excess of those costs which would have resulted had Western Electric earned the same rate of return on its business that the company has been authorized to earn. This followed the principle and methods previously adopted by the commission. Evidence did not convince the commission that it should depart in any respect from such previous action.

The same principle was followed by the commission in allowing as operating expenses payments made by the company to Western Electric for equipment and supplies. The commission said that such adjustments assured the ratepayers that they would not be unduly burdened with the affiliated manufacturer's profits.

Separations Methods

The company claimed that the separation of Category A plant (outside plant used for subscriber lines, interlocal trunks, toll-connecting and number-checking trunks, and station equipment) between intrastate toll and exchange should be made on the basis of relative message-mile-minutes of use rather than on message-minutes of use. The latter is prescribed in the NARUC Separations Manual for jurisdictional separations. In the sense that the company's method followed the manual in certain instances and departed therefrom in others, the company produced a hybrid separations method. The commission concluded that it had no merit.

The proposed method was contrary to the commission's earlier finding that the separation of Category A exchange plant between intrastate toll and exchange on the basis of message-minutes of use for each service is reasonable so long as the same basis is used for the separation between interstate and intrastate operations.

Concurring Opinion

Commissioner Untereiner wrote a separate concurring opinion for the sole purpose of emphasizing his understanding of the language and intent of the opinion in two respects. He pointed out that the disallowance of working cash was predicated on the company's failure to sustain its burden of proof that there was need for working cash provided by the investors. That ruling, he said, could not be properly interpreted as indicating a conclusion of the commission either that adequate working cash is unnecessary or that working cash made available by the lag in payments by the utility to Western Electric should be excluded from the rate base.

Commissioner Untereiner pointed out that material acquired from Western Electric was excluded from the rate base on the grounds that Western Electric might have charged that much less and still have earned the rate of return allowed to the utility. This adjustment, he said, was also predicated on the company's failure to sustain its burden of proof. It did not, in his opinion, commit the commission either to a position that an affiliated manufacturing company should be restricted to the same rate of return as that allowed a utility, or to the position that the commission should give primary attention to the profits earned by a manufacturing affiliate rather than to the fairness and reasonableness of the prices paid to the affiliate by the utility.

Where a utility buys from or contracts with an affiliate, it must clearly prove the reasonableness of the prices it pays. This, he said, the company failed to do to the commission's satisfaction. *Re Pacific Teleph. & Teleg. Co. Decision No. 56652, Application No. 39309, May 6, 1958.*

Whether Regulators Embraced within Franchise Held Fact Question

THE New York court of appeals affirmed a lower court judgment dismissing a gas company's action for an order directing a borough president to issue a permit for installing gas pressure regulating stations after the company had been directed by the commission to make such installations.

The question presented by the appeal was whether certain gas pressure regulating stations are "conductors." If considered such, the company operating in New York city could install the regulators in any or all of the public streets under its franchise rights without further consent of the city. The installation of 356 stations, each measuring approximately 365 cubic feet, was contemplated.

The majority opinion held that whether the gas regulator involved was embraced within the terms of the franchise could not be decided upon conflicting affidavits of experts as to its nature and functions, and the manner, necessity, and feasibility of the proposed installation in the public streets. It was a question of fact. The court did not regard Brooklyn Edison Co., Inc. *v.* Davidson (1935) 269 NY 48, 198 NE 627, as necessarily decisive.

Judge Burke, however, in a dissenting opinion, considered the Davidson case as decisive. In that case, the court had stated that the word "conductors," as used in statutes, must be deemed to include only those media the primary function of which is transmission. On that basis it had been held that, although a transformer incidentally participates in the conduction of electricity, transmission of electricity is not its primary function, and so it is not a conductor within the meaning of the statute.

The parallel to the instant case seemed to the dissenting judge to be complete. Primarily, the function of a gas pressure regulating station, he pointed out, is to keep at a required level the pressure of gas used by consumers. Its service as a channel or conduit is only incidental. There is no legal difference between the primary function of an electrical transformer and a gas pressure regulator, he pointed out.

However, the reduction of the voltage in electrical transmission is analogous to the reduction of pressure of gas in the mains. *Brooklyn Union Gas Co. v. Cashmore, 4 NY2d 727, 148 NE2d 322.*

Grandfather Authority Granted Too Late

A COMMISSION order granting to the holder of a limited certificate additional authority to haul livestock anywhere in the state was arbitrary and void, the Arizona supreme court ruled. The commission had acted without notice or hearing long after the expiration of the carrier's right to apply for grandfather rights to transport livestock.

Under a commission rule, holders of vicinity certificates who were engaged in hauling livestock could apply for certificate authority to continue such hauling. The time limit fixed by the rule was 1937.

Seven years later the commission attempted to grant the additional authority by means of a "corrected" certificate. Subsequently, in a proceeding by the holder to transfer his authority, protestants asserted in a collateral attack that the commission had no authority to

enlarge the carrier's certificate except by a regular certificate proceeding after due notice and hearing. The court sustained this contention.

Rules and regulations prescribing methods of procedure of an administrative board or commission, said the court, have the effect of law, are binding on the agency, and must be followed by it so long as they are in force and effect. The obvious necessity for a limitation upon the time for filing grandfather applications is to enable the commission to function efficiently in determining the requirements of public convenience and necessity for carriers who have filed applications. Without such a requirement the commission would be forced to speculate as to the number of existing operations, it was pointed out.

Collateral Attack Valid

The court held that the rule prohibiting collateral attack on the commission order granting the corrected certificate was inapplicable because the order was void. Nor could laches be asserted as a defense because of the lack of notice and also because of the public interest in this case. The doctrine of laches is a form of estoppel, the court explained, and where the public interest is involved neither estoppel nor laches can be permitted to override that interest. *George d/b/a Paul Alley Livestock Transp. Co. et al. v. Arizona Corp. Commission, 322 P2d 369.*

Certificate Renewal Held Invalid

THE Arizona supreme court ruled that the commission had no authority to renew by an *ex parte* order a certificate which by its own express limitation had already expired. A lower court judgment enjoining a motor carrier from continuing operations under the certificate was affirmed.

The court pointed out another reason why the commission's renewal of the certificate was invalid. Prior to the expiration date under the terms of the limitation, the commission, with due notice and hearing, had denied reinstatement of the certificate after having summarily canceled it on grounds of abandonment. No appeal was taken from the orders denying reinstatement. Their legal effect was to revoke the certificate, and they became *res judicata* as to that fact, said the court. The certificate thereafter had no validity, and the commission had no authority to renew it.

The only way for the motor carrier to regain operating authority was to institute a regular certificate proceeding. *Timmerman et al. v. Lightning Moving & Warehouse Co. et al. 322 P2d 376.*

Telephone Subscribers Not Aggrieved by Company Purchase of Another Utility

AN individual telephone user and a businessmen's organization failed to show the necessary aggrievement to give them standing to obtain review of a Federal Communications Commission order authorizing Illinois Bell Telephone Company to purchase Manhattan Telephone Company. The individual was a Bell telephone user and the organization described itself as a subscriber and the representa-

tive of its members who were generally customers of Bell. The commission order was based upon a finding that the acquisition would be of advantage to customers and would be in the public interest. None of Manhattan's subscribers voiced any objection.

Not until after the commission had authorized the proposed acquisition did the two petitioners indicate their opposition. They first sought a commission rehearing, and that denied, they asked the court to review the proceedings. Their right to both administrative rehearing and judicial review was dependent upon a showing that they were aggrieved or that their interests were adversely affected by the order.

Aggrievement Claimed on Rates

The principal argument in support of the petitioners' right to review was based on a charge that the purchase price was excessive in the amount of $41,000 and that the excess would place an unfair burden upon Bell's ratepayers. The alleged excessive amount, however, assuming it was excessive, was actually only an infinitesimal part of Bell's unappropriated earned surplus. No reason was apparent how this could affect the company's rates, nor was it shown that such excess would find its way into Bell's rate base.

Antitrust Grounds Asserted

Next it was asserted that the acquisition would violate the antitrust laws. The petitioners claimed standing as representatives of the public interest entitling them to a hearing on this question. The Communications Act provides that if the commission finds that a proposed acquisition will be of advantage to the persons to whom service is to be rendered and is in the public interest, then any act of Congress making the proposed transaction unlawful shall not apply. The commission made the statutory finding in this proceeding.

The statute apparently makes an acquisition order by the commission immune from the antitrust laws, said the court. Furthermore, the petitioners, having no standing in their own right to attack the order, were by the same token without right to appear as representatives of the public.

A final contention that the acquisition was inconsistent with the REA loan program was rejected. The court agreed with the commission that there was no apparent relationship between the REA Act and the acquisition statute. *Murphy et al. v. United States et al. 252 F2d 389.*

Commission Jurisdiction over Use of Telephone Directory Covers Upheld

A NEW YORK court has upheld the commission's approval of a tariff provision filed by telephone companies prohibiting the use of attachments to telephone directories. The particular attachment involved in this case was a plastic cover furnished to subscribers by a private advertising concern. The covers contained advertising with telephone numbers, including the numbers of emergency public services.

The principal issue was whether the commission had jurisdiction. The advertising concern claimed that the commission was attempting to regulate the advertising business, over which it has no jurisdiction. The commission contended that the practice here in question was so

intimately related to telephone service and to rates as to fall within its general regulatory powers. The commission had found that potentially incorrect numbers could be used in advertising attached to the telephone company's directories, resulting in confusion and detriment to service generally (17 PUR3d 394).

While such potential interference with service is not an unreasonable basis for the commission's assumption of regulatory supervision over attachments to directories, the jurisdiction of the commission need not depend upon that basis alone, the court declared. The impact upon rates to subscribers is a more important factor. Any loss of revenue from other sources by a telephone company must be reflected, at least in some degree, in the rates charged the utility's subscribers.

It is a fair inference, said the court, that an advertiser who has advertising attached to the front of a directory is not likely to pay for advertising in the yellow pages. To the extent that the company's revenues are thus reduced, rates will tend to be increased. The court ruled that the commission's determination in this case was reasonable. *National Merchandising Corp. v. New York Pub. Service Commission, 171 NYS2d 1009.*

Exceptions and Rehearing Not Prerequisite To Judicial Review

THE Florida supreme court denied a motion to dismiss a certiorari proceeding to review a final order of the commission granting a private contract certificate. The parties making the motion contended that the administrative remedies had not been exhausted in that appellants had failed to file formal exceptions to the examiner's proposed order, and had also failed to petition for rehearing, thereby precluding judicial review.

The court disagreed. Generally, in the absence of a proper rule or applicable statute, it is not necessary that a party file formal exceptions to a report or a proposed order of an examiner in order to comply with the requirement that a party exhaust administrative remedies before seeking judicial review, and in the absence of a statute or regulation specifically requiring filing of a petition for rehearing as a condition to judicial review, the rule making it necessary to exhaust administrative remedies does not necessitate a petition for rehearing after final order of an administrative agency.

Neither the filing of exceptions nor petitions for rehearing were conditions precedent to obtaining judicial review, although the court pointed out that it would be better practice for aggrieved parties to file such exceptions and petitions for rehearing. *Ace Delivery Service v. Boyd, 100 So2d 417.*

Commission Implements Railroad Safety and Health Statutes

THE Colorado commission formulated railroad health and safety rules, implementing the 1957 acts of the state legislature. One of the rules dealt with the installation by railroads of electric marker warning lights on the rear of

trains. A discussion arose at the hearing regarding the definition of train, and whether or not an engine without cars constitutes a train.

The commission held that a train includes a single engine, according to the common usage of the railroad industry itself. In view of this, the commission felt that the legislature intended that electric markers be added to the rear end of engines as well as to the last car or caboose of other trains.

Another rule dealt with the installation and maintenance of sanitary drinking water facilities in cabooses. The legislature had specified that such facilities should be "of glass bottle design."

These words seemed to the commission to be the source of misunderstanding and conflict of opinion between the brotherhoods and the railroads. "Glass bottles," said the commission, refers to the substance of which the container is made. "Design" refers to shape. The commission felt that the words were inconsistent because the word which connotes shape is modified by words that connote substance. Clearly, the legislature must have meant that the container would be a glass container. There had been no evidence adduced that glass bottles have any distinctive design or shape that would readily identify them. It was logical to assume that the legislature was not particularly interested in the shape of the container, but rather in the type of container. The common sense of this was apparent in that glass bottles are considered more sanitary and are always open for the inspection of anyone who may use them. *Re Rules and Regulations Pertaining to Railroads and Express Companies, Case No. 5023, Decision No. 49746, March 4, 1958.*

Partial Abandonment Authorization outside ICC Jurisdiction

THE United States district court set aside an Interstate Commerce Commission order permitting a railroad to abandon passenger ferry service across New York harbor at certain points between New Jersey and New York. The court held that there was not such a distinction between passenger and freight ferry service after vessels were waterbound for railroad's terminus in New York city so as to turn them from one railroad line into two or more. Freight and passenger ferries had one general superintendent and one set of repair facilities. Abandonment of passenger ferry service, while maintaining freight service on the route, would constitute a mere partial abandonment of a portion of the railroad's service, held the court. Therefore, under statute, the commission was without jurisdiction to permit such partial abandonment. *New Jersey Pub. Utility Commissioners v. United States, 158 F Supp 104.*

Equalization of Intrastate and Rail Freight Rates

THE Florida commission granted railroads a 9 per cent general increase, with certain exceptions, in their freight rates on Florida intrastate traffic. The new rates corresponded in all respects with interstate increases authorized by

the Interstate Commerce Commission. They were prescribed on a percentage factor found to be reasonable by the Interstate Commerce Commission for all railroads operating in the southern region.

It was noted that general increases have no relationship to cost of service, particular types of traffic, and density of traffic. They increase revenue on traffic not driven away to other forms of transportation. Railroad management has been unable to prevent increased costs and has been doing all within its power to bring unit costs down. Carloadings have fallen off, wages have gone up, prices of material have increased, and repair programs have been curtailed. As a matter of fact, capital is no longer available for new equipment and is even being depleted to meet payrolls. Crews have been laid off in an economy move.

The commission observed that it was reluctant to add further increases because it believed that any diversion might place the railroads in a more perilous position than at the present time. It believed, however, that with certain exceptions the increases should be granted to offset increased wages, payroll taxes, and prices for materials.

According to the commission, the public interest in a sound, adequate, and efficient transportation system requires the railroads to increase their intrastate freight rates on short notice. In the absence of the additional revenue to be derived from this proceeding, the earnings of the Florida railroads would be insufficient to enable them to provide efficient service. *Re Railroad Freight Rates and Charges, Docket No. 4964-A-RR, Order No. 2603, April 21, 1958.*

Commission's Denial of Discontinuance Reversed

THE Louisiana supreme court affirmed a lower court judgment reversing a commission order denying a railroad's application for authority to discontinue operation of certain passenger trains and a subsidiary's application for permission to operate common carrier motor service between the points.

The evidence showed that the railroad had operated the trains at considerable out-of-pocket expense since 1950. Though the railroad had exerted all efforts to economize in the operation of the trains, there was no other method by which more economical operation could be accomplished. There was no reasonable hope of increased patronage and, on the contrary, because of the fact that paved highways paralleled the line of the railroad and the general public had become accustomed to traveling the short distance covered by the route in their own private vehicles or buses, there was a prognosis that patronage would further diminish. The evidence showed that public necessity did not require operation of the trains and public convenience would not be substantially affected by discontinuance. *Chicago, R. I. & P. R. Co. v. Louisiana Pub. Service Commission, 100 So2d 471.*

Burden of Proof on Railroad in Freight Rate Action

THE United States court of appeals reversed and remanded a lower court judgment which had been brought to recover freight charges deducted by the government from a bill admittedly due for alleged overpayment on previous bills.

The court held that the railroad had the burden of proving that the government's deduction was wrong. The burden was not on the government to prove correct weight.

Construction of a printed railroad tariff, pointed out the court, presents a question of law and does not differ in character from that presented when construction of any other document is in dispute. That meaning should be given which the words might reasonably carry to shippers to whom they are addressed. Any ambiguity or reasonable doubt as to the meaning must be resolved against the carrier in this case.

The fact that the government's action had been taken after the running of the period set forth in the statute requiring suit against the Commodity Credit Corporation to be brought within six years after accrual of the rights sued upon, did not render the federal government without authority to deduct freight charges paid from funds of the corporation on shipments for export for its account. *United States v. Missouri P. R. Co. 250 F2d 805.*

Membership Corporation Not Bound To Serve Nonmember

THE Tennessee supreme court affirmed a lower court decree dismissing a suit by an individual seeking to compel a membership electric corporation to provide service to his property.

The corporation argued that it had no duty to extend service to the complainant because he did not allege that he was a member or that he had complied with the rules and regulations of membership. Nor would the corporation be bound to supply service even if it were found to be a public utility, since in that event jurisdiction would first vest in the commission and no proceeding had been brought before the commission. The court agreed with this. *Chumbley v. Duck River Electric Membership Corp. 310 SW2d 453.*

Thoroughbreds Just Ordinary Livestock

THE Louisiana commission denied an application for a certificate to operate as a common carrier of livestock other than ordinary. The applicant sought authority to transport thoroughbreds; *i. e.*, race horses and breeding stock.

The commission noted that a statute exempted certain vehicles from regulation. One such exemption applied to vehicles exclusively engaged in the transportation of livestock. The statute itself made no distinction between ordinary livestock and livestock other than ordinary.

The commission did not deem it advisable to do so, notwithstanding that the Interstate Commerce Commission had made the distinction with respect to high value animals transported in interstate commerce even though the federal act did not differentiate between the various types of livestock. *Re Louisiana Turf Express, Order No. 7415, No. 7304, December 12, 1957.*

Other Recent Rulings

Contemplated Expense Allowed. Additional expense for a contemplated wage increase and for additional personnel, though not substantiated by a definite commitment, was allowed by the Wisconsin commission in a telephone rate proceeding, but the effective date of a resulting rate increase was made contingent on the company's actually placing these expense changes in effect. *Re Valders Teleph. Co. 2-U-4931, March 21, 1958.*

Telephone Return. The Wisconsin commission deemed a return of 7.46 per cent excessive for a telephone company converting to dial operation whereas it considered a 6.5 per cent return reasonable. *Re Ogdensburg Teleph. Co. 2-U-4928, March 27, 1958.*

Telephone Rate of Return. The Wisconsin commission granted a small telephone company a rate increase affording a return of 6.5 per cent on a net book value rate base, but it required the increase to be spread over different classes of service according to operating costs and value of service rather than be applied in a flat amount as requested. *Re Eau Claire County Teleph. Co. 2-U-4946, April 18, 1958.*

Telephone Rate Increase. Expressing some concern about the quality of service and the point of diminishing returns with respect to rate increases, the Wisconsin commission authorized General Telephone Company of Wisconsin to increase rates sufficiently to produce a return of 6.26 per cent on an investment rate base, affording earnings of 9.73 per cent on common stock. *Re General Teleph. Co. of Wisconsin, 2-U-4896, April 18, 1958.*

Municipal Duty to Serve. The Wisconsin commission ruled that a city water plant by voluntarily supplying water to a number of contiguous communities had held itself out to serve all similarly situated communities, and the plant was guilty of discrimination in refusing to serve a contiguous town which had requested water for resale. *City of Wauwatosa v. City of Milwaukee, 2-U-4719, April 2, 1958.*

Water Rate of Return. A water utility faced with an accelerated expansion program and rising costs was authorized by the Wisconsin commission to increase rates about 35 per cent, so as to produce a return of 5.5 per cent on a net book value rate base. *Re City of Waukasha, 2-U-4897, April 3, 1958.*

Acquisition Adjustment Charge. In a temporary order allowing the Nelson Telephone Co-operative a rate of return of 6.1 per cent on a net book value rate base, the Wisconsin commission denied as unreasonable a substantial annual charge to operating expenses for amortization of the excess cost of acquired property over depreciated original cost. *Re Nelson Teleph. Co-op. 2-U-4919, April 15, 1958.*

Refund Balance Retained. A gas utility won permission from the Missouri commission to retain a relatively small sum of money representing refund checks to former customers who could not be located, together with a small refund from a supplier, where the two sums only partially offset the cost of making the refund; but the company was required to credit operating expenses with the sums retained and to stand ready to pay any legitimate refund claims. *Re Missouri Power & Light Co. Case No. 12,315, April 1, 1958.*

Burden of Proof for Rate Change. The Federal Power Commission held that independent natural gas producers who failed to offer any evidence respecting their investment or costs of operation did not sustain their burden of proof in support of a rate increase filed pursuant to a contract escalation clause. *Re Pan American Petroleum Corp. et al. Docket Nos. G-8697 et al. April 14, 1958.*

Interstate Burden. The North Carolina commission upheld a rule it had previously adopted prohibiting bus companies from selling tickets, intrastate or interstate, at any point other than in a union station in municipalities having a union station, saying that the rule imposed no burden on interstate commerce. *Queen City Coach Co. et al. v. Atlantic Greyhound Corp. Docket No. B-7, Sub 38, January 13, 1958.*

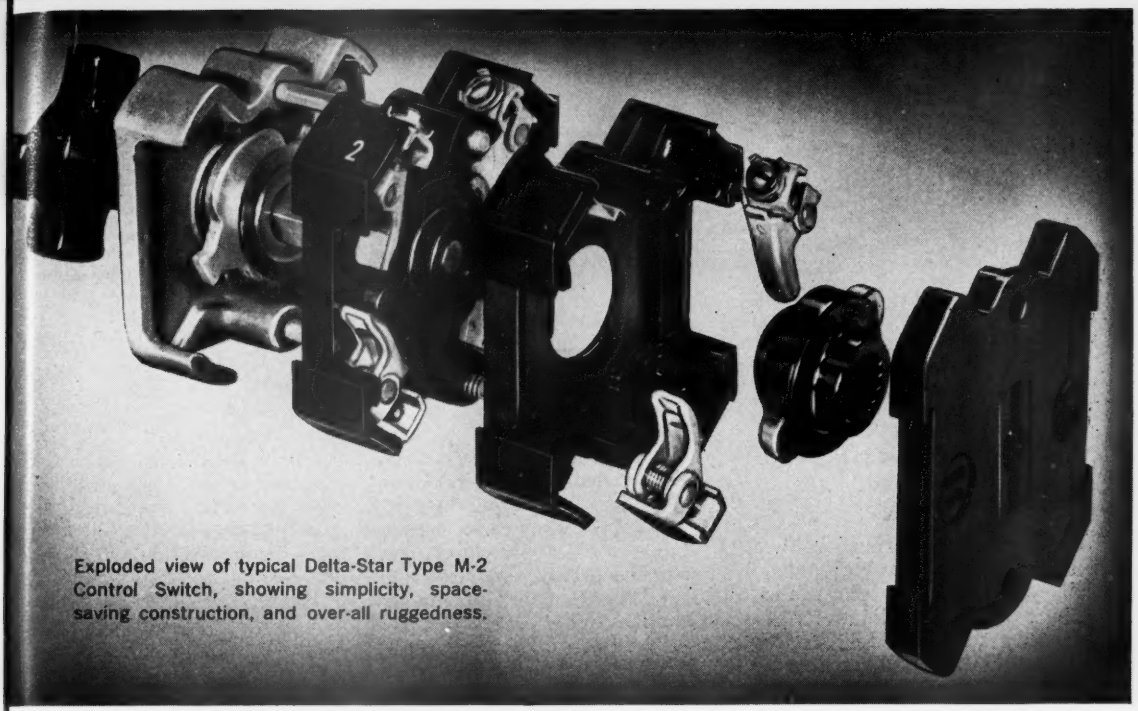
Motor Freight Rate Increase. The North Carolina commission authorized motor carriers to increase their rate for transportation of household goods upon a showing that the existing rate for this traffic was inadequate to provide for rising operating costs and afford any semblance of a reasonable rate of return. *Re Motor Carrier Rates and Charges on Household Goods, Docket No. T-825, Sub 16, March 17, 1958.*

Intrastate Rail Rates Up. In order to enable railroads operating in North Carolina to meet increased costs, the North Carolina commission authorized general rate increases for intrastate traffic, excepting certain commodities subject to sharp competitive transportation, corresponding to rate increases of 6 per cent and 5 per cent granted by the Interstate Commerce Commission in 1956 and 1957. *Re Railroad Rates and Charges, Docket No. R-66, Sub 6, 9, March 14, 20, 1958.*

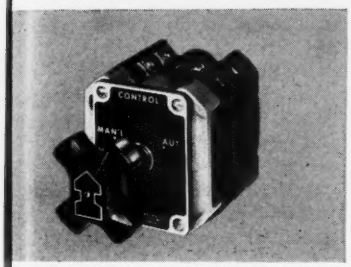
Rail Freight Rate Reduced. Upon investigation, the North Carolina commission approved a scale of rates for intrastate transportation of asphalt on distance hauls, having the effect of reducing such rates to the level of interstate rates applicable to this commodity; a scale of maximum rates was prescribed for short distance point-to-point hauls of asphalt. *Re Rail Rates on Asphalt Carloads, Docket No. R-66, Sub 18, March 13, 1958.*

Bus Discontinuance. The Illinois commission dismissed a complaint against a transit company's discontinuance of evening service in a city upon a showing that the company had complied with notice rules and regulations, that patronage during the evening hours in question did not pay the drivers' wages, and that public convenience and necessity did not require continued operation. *Village of Bourbonnais et al. v. Kankakee Motor Coach Co. 44431, 44454, March 19, 1958.*

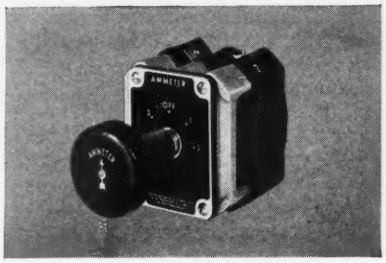
Specialized Carrier Authority. The Texas supreme court affirmed a lower court decision which upheld a commission order modifying specialized motor carrier certificates and increasing the number of commodities they may carry, where the evidence indicated that special handling equipment was needed and that the service of protesting common carriers was inadequate. *Alamo Express, Inc. et al. v. Union City Transfer et al. 309 SW2d 815. Rehearing denied March 5, 1958.*



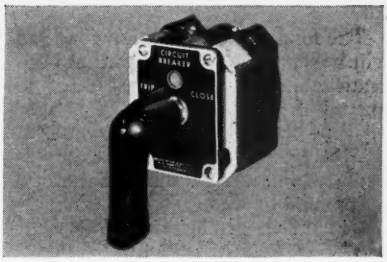
Exploded view of typical Delta-Star Type M-2 Control Switch, showing simplicity, space-saving construction, and over-all ruggedness.



ual-to-Automatic Selector Switch with finger-grip handle



Ammeter Switch with knurled handle



Circuit-Breaker Control Switch with pistol-grip handle

Why compact DELTA-STAR Control Switches belong in your switchgear specifications

Some of the many types available

Circuit-breaker control • Manual-to-automatic selector • Voltmeter switches • Frequency meter • Synchroscope • Motor control • Ammeter switches • Power-factor meter • Regular transfer • General control • Wattmeter • Temperature meter

For all their compactness, Delta-Star Control Switches are rugged, long-lasting, and built with high interrupting capacity. Here are the features that give these switches improved efficiency, economy, and service:

Versatility—useful in many diverse ways—see examples listed at left. They're rated for 20-amp. continuous service and 250-amp. short-time (up to 3 seconds) service. Many variations of standard instrument and control switches are possible, and special arrangements are available on request.

Small Size—only 3⅞″ high by 3¼″ wide. Angular position of terminals makes wiring easy, even when switches are closely spaced. Large terminal clearances and complete baffling between sections. Inspection is quick and easy.

High Interrupting Capacity. At 250v ac inductive, single-break contacts have an interrupting capacity of 25 amperes, double-break contacts 75 amperes.

THESE AND OTHER FEATURES make Delta-Star Control Switches the *right* switches to specify when buying control panels and other switchgear. Call your Delta-Star representative for further details, or write *Dept. 46A, Delta-Star Electric Division, H. K. Porter Company, Inc., 2437 Fulton Street, Chicago 12, Illinois. District offices in principal cities.*

H. K. PORTER COMPANY, INC.

DELTA-STAR ELECTRIC DIVISION

Connors Steel, Delta-Star Electric, Disston, Forge & Fittings, Leschen Wire Rope, Quaker Rubber, Refractories, Riverside-Alloy Metal, Vulcan-Kidd Steel, H. K. Porter Company (Canada) Ltd.

Industrial Progress

Electric Industry Construction Continuing At Record Pace, EEI Reports

Construction of new facilities by electric power systems in the United States is proceeding at a record rate, with about 15¾ million kilowatts of new capacity scheduled for service this year, it was reported recently in the 23rd Semi-Annual Electric Power Survey of the Edison Electric Institute.

The total capacity addition for 1958 will be about double that put into operation last year, and is expected to exceed the previous high record of 1955 by some 3 million kilowatts. It will bring total power-producing capability to nearly 147 million kilowatts by the end of this year.

Scheduled production of electric generating equipment by manufacturers for the three-year period 1958-1960 totals more than 42 million kilowatts, the survey reports.

In forecasting peak loads for 1958 through 1960, the survey shows only small revisions downward from previous predictions. The Survey Committee takes this as an indication of reasonable confidence that the present recession will not reach major proportions. The December, 1958, peak is expected to be about 120 million kilowatts, 2.5 per cent below the prediction made last fall, but nearly 12 per cent greater than last winter's peak. Gross margin of generating capability over demand is estimated to be about 23 per cent for next December.

For 1959 and 1960, reserve margins of about 23 per cent are also expected. The 1959 December peak is predicted to be 129 million kilowatts, with capability of 159 million kilowatts, while the forecast for the same month in 1960 shows an estimated peak of about 138 million kilowatts, and capability of more than 170 million kilowatts.

Summer peaks for 1958 and the next two years are predicted to be about 3.8 to 2.4 million kilowatts below the winter peaks.

The Power Survey covers approximately 98 per cent of the capability and 99 per cent of the energy output of the electric power systems of the nation, including both investor-owned systems and those of governmental agencies—Federal and non-Federal.

Chairman of the Institute's Power Survey Committee is Arthur S. Griswold, vice president of the Detroit Edison Company. The survey, which has been made semi-annually since 1947, is the most complete study of its kind, including forecasts of peak power demands and supply capabilities on a regional and national basis. It also presents information on scheduled production of heavy electric power equipment and open manufacturing capacity. The periodic survey is prepared in cooperation with power systems throughout the United States and with the principal manufacturers of heavy electric power equipment.

RATE ENGINEERS WANTED BY REA

Rural Electrification Administration has openings in Washington, D. C. for electrical retail and wholesale rate engineers. Retail rate work includes estimating cost of service, developing rate schedules for various classes of service and preparing contracts. Wholesale rate work includes estimating production and transmission costs, analyzing and developing rates and schedules and preparing contracts. Starting annual salary up to $8,645. Selections made under Federal Civil Service competitive regulations. Apply Henry C. Starns, Chief, Personnel Division, Section C-1, Rural Electrification Administration, U. S. Department of Agriculture, Washington 25, D. C.

Gas Industry to Spend $36 Billlion For 45 Per Cent More Customer Needs by 1970

The gas utility and pipeline industry will spend more than 36 billion dollars for construction between now and 1970, the American Gas Association forecasts in a new growth analysis. Construction spending will reach an annual peak of $3.6 billion in 1961, when the industry will serve 43.7 million customers.

The AGA estimates gas customers will increase by nearly 45 per cent over the 30.3 million served last year. Sales of 153 billion therms in 1970 will be more than double last year's sales of 75.7 billion therms, and revenues from ultimate customers will total an annual 10.7 billion dollars, up 162 per cent from 1957.

More than 17 million (62 per cent of last year's residential customers used gas for heating. AGA predicts the industry will have 33.6 million home heating customers on its lines by 1970, nearly 85 per cent of all residential consumers and twice as many as last year. Many also will use gas for summer cooling.

G-E to Supply Two High Pressure Boiler Feed Pump Turbines for Phila. Elec.

Two boiler feed pump turbines for one of the world's largest supercritical pressure electric power generating units have been ordered by the Philadelphia Electric Company from General Electric Company's Small Steam Turbine Department.

Steam turbine-generator unit rated at 325,000 KW and will be installed as unit No. 2 in the power company's Eddystone station.

Each high pressure boiler feed pump turbine is rated 5000 hp, 5[illegible] rpm, and will use steam taken from the first reheat line at 1070 psia, 7[illegible] F, and exhaust to the second reheat line at 348 psia.

Turbine driven boiler feed pumps provide a reliable and economic method for raising large quantities of condensate to high pressure and also permit an increase of salable

NDUSTRIAL PROGRESS—
(Continued)

lowatts by decreasing the "unit" xiliary electrical requirements.

According to G. E. Holst, Manger Industrial & Utility Sales for e SST Dept., this will be the second iler feed pump turbine application r supercritical pressure steam turne generator units. Two turbines ve been shipped for installation in he Cleveland Electric Illuminating mpany's Avon station for use with 250,000 KW powermaker.

ast Ohio Gas Wins First Prize In P.U.A.A. Contest

The "Green Dot" advertising campign prepared by Ketchum, Macod & Grove, Inc., for the East Ohio s Company won first prize in the mplete program" classification of e 35th Annual Better Copy Contest nsored by the Public Utilities Adrtising Association.

A large green dot was the campaign ntification mark in all media—wspapers, radio, television, free int-of-sale material, postal cards, d bus cards. In addition, more than 0,000 was awarded to dealers for es of gas ranges. And "mystery ppers" awarded prizes to dealers king the best sales "pitches."

During the seven-week campaign its northeastern Ohio market, East io Gas Company sold 4,899 matchs gas ranges, 70 per cent of which re equipped with the new feature, Burner-with-a-Brain. The activity urred during a period when sales re off 12 to 15 per cent nationally, compared with the same period of 57.

The PUAA Better Copy Contest is oldest continuous competition conted within the advertising profesn. Entries are accepted from all gas electric utilities.

A-C Releases New Steam Turbine Bulletin

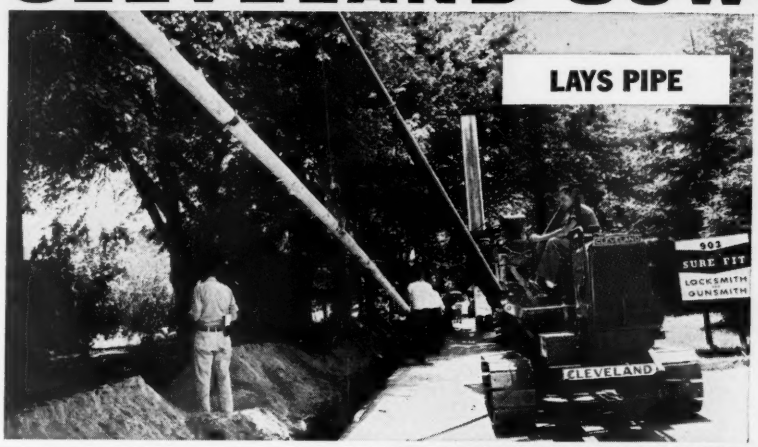
Design and construction features of is-Chalmers WA-Series steam turne-generating units rated 2000 ough 16,500 kw are covered in a w 40-page bulletin released by the mpany.

The bulletin carries cross-section grams of each of the four basic es of WA-Series steam turbinerator units designed for condensnon-condensing, condensing autotic extraction, and non-condensing omatic extraction operation.

Turbine construction features covd in the bulletin include casings,

(*Continued on page* 22)

CLEVELAND 80W



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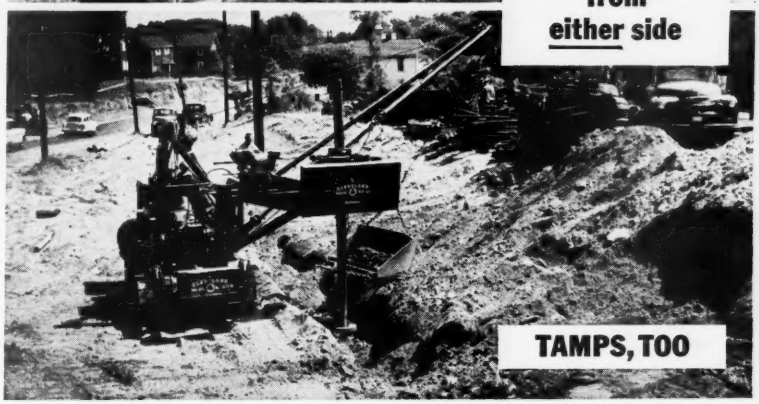

TAMPS, TOO

Does all three jobs better—with only one operator

Lays pipe • 30,000 foot-pound capacity—power boom, up and down • 4 line speeds • long reach, 21 feet • sets hydrants, valves • unloads, strings • pulls street crossings • handles headache ball.

Backfills fast—from either side of trench • 20 passes per minute • 4½ foot scraper board • backfills clean • stays off completed work • works safer, parallels work • fits all job conditions.

Tamps as it fills • meets rigid density specifications • tamps from the bottom up • parallels work, no straddling • tamps wider, tamps safer • breaks concrete • reduces haul-out • saves clean-up.

The CLEVELAND TRENCHER Co.

20100 ST. CLAIR AVE. • CLEVELAND 17, OHIO

Good Everywhere

glands, spindles and wheels, blades, nozzles and diaphragms, bearings, governing system, stop and throttle trip valves, insulation and lagging.

An important feature of the WA-Series steam turbine-generating unit is its self-contained oil system which not only provides for normal lubrication and cooling at the bearing surfaces but also furnishes the actuating fluid for the governor relay system. Color diagrams trace this system for the various ratings.

The bulletin also describes such generator construction features as the stator, rotor, bearing, excitation systems, air-cooling and ventilation system for units 2000 through 15,625 kw, and the hydrogen cooling used in the 16,500-kw unit.

Copies of the bulletin, "Steam Turbine-Generating Units," 03B7654A, are available on request from Allis-Chalmers Manufacturing Company, Milwaukee 1, Wisconsin.

24-Channel Microwave Radio Station Announced by RCA For Point-to-Point Communications

A compact transmitter-receiver unit for microwave radio relay systems that provides five times the previous one-package channel availability, and can be inexpensively pole-mounted, was announced recently by Theodore A. Smith, executive vice presider Industrial Electronic Products, Radi Corporation of America.

"The new RCA MM-9E," M Smith said, "will appeal principally public utilities in communications a remote control operations.

"In typical microwave fashion, t MM-9E operates with a minimum interference from atmospheric co tions, permitting uninterrupted mote control of a pipeline sy-te from a central point, with no thre-t broken wire circuits in ice or sno storms."

The MM-9E provides twenty-fo channels for voice communicatio

(*Continued on page* 24)

This announcement is not an offer to sell or a solicitation of an offer to buy these securities. The offering is made only by the Prospectus.

$50,000,000

Consolidated Edison Company of New York, Inc.

First and Refunding Mortgage Bonds, 4% Series O, due June 1, 1988

Dated June 1, 1958

Price 102.655% and accrued interest

The Prospectus may be obtained in any State in which this announcement is circulated from only such of the undersigned and other dealers as may lawfully offer these securities in such State.

HALSEY, STUART & CO. INC.

AMERICAN SECURITIES CORPORATION — BEAR, STEARNS & CO.

DICK & MERLE-SMITH — EQUITABLE SECURITIES CORPORATION

LADENBURG, THALMANN & CO. — WERTHEIM & CO.

BACHE & CO. — BAXTER & COMPANY — R. S. DICKSON & COMPANY INCORPORATED

GREGORY & SONS — HIRSCH & CO. — NEW YORK HANSEATIC CORPORATION

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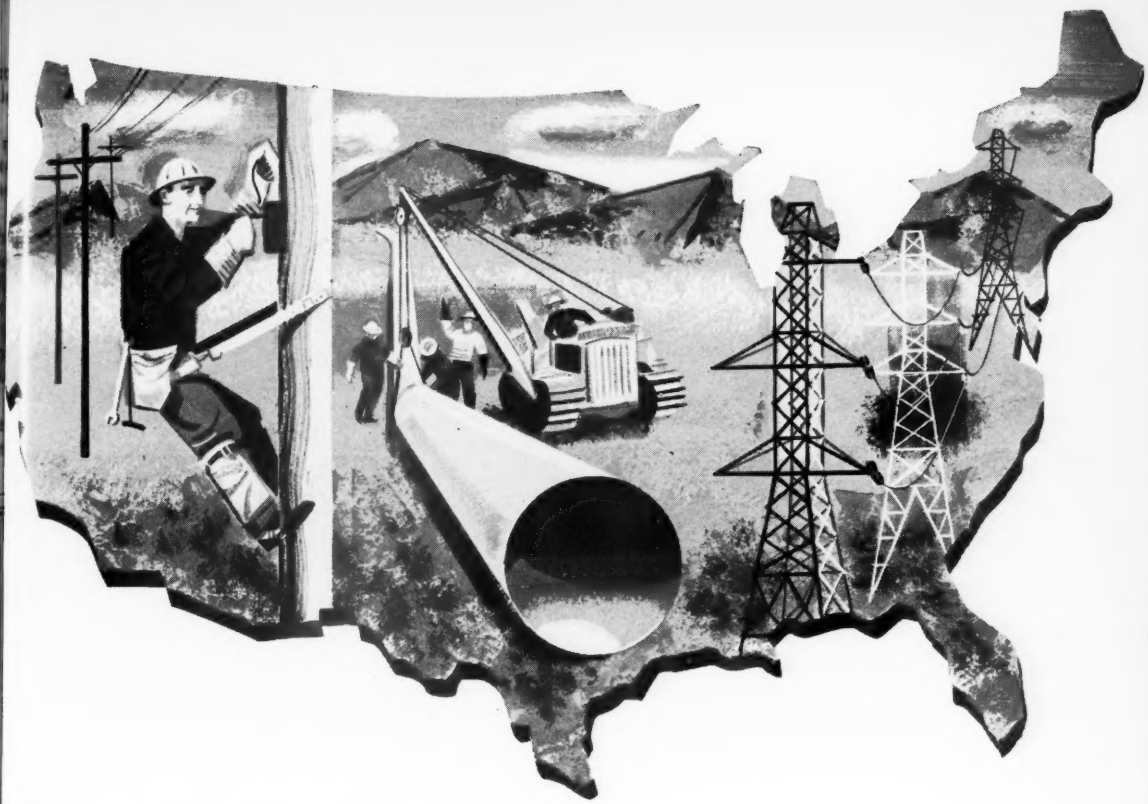
JOHNSTON, LEMON & CO. — VAN ALSTYNE, NOEL & CO.

June 4, 1958.



Lifelines of the nation!

Playing a dynamic role in the economy of our nation, the investor-owned Utility Industry continues to expand its lifelines of service. Not only meeting the needs of today's consumers, but preparing also for an atomic age, Utilities are faced with enormous capital expansion requirements.

To assist in the many financial complexities accompanying this growth, Irving specialists are ready with new and sound approaches. Our Analytical Studies, Seminars, and Round Tables, may bring added vitality to your capital planning, financing, or cultivation of the financial community.

For more information, call Public Utilities Department at DIgby 4-3500
or write us at One Wall Street

IRVING TRUST COMPANY

One Wall Street, New York 15, N.Y.

Capital Funds over $130,000,000 *Total Assets over $1,600,000,000*

RICHARD H. WEST, *Chairman of the Board* GEORGE A. MURPHY, *President*

Public Utilities Department—JOHN F. CHILDS, *Vice President in Charge*

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

facsimile transmissions, teletypewriter and remote control functions.

The unit was designed for use with RCA's MV-124 multiplex, or any other single-sideband frequency-division multiplex equipment.

For relays over longer distances two of the packaged stations are mounted back-to-back.

The receiver is a single superheterodyne type using a crystal-controlled local oscillator. The transmitter, also, is crystal-controlled.

RCA MM-9E microwave assemblies are available in a number of arrangements to meet various requirements. The individual units can be powered either by battery or alternating current.

Further information may be obtained from the Communications Equipment Sales Department, Industrial Electronic Products, Radio Corporation of America, Camden, N. J.

M. W. Kellogg Names Donald M. Marshall Sales Engineer of Fabricated Products

The M. W. Kellogg Company, New York, a subsidiary of Pullman Incorporated, announces the appointment of Donald M. Marshall as sales engineer in the Fabricated Products Division. Mr. Marshall was formerly production engineer, Process and Methods, at Kellogg's Jersey City Manufacturing Division.

Pelton Dam Project Nearly Doubles Portland G.E. Hydro Capacity

Portland General Electric Company's hydroelectric power generating capacity has been nearly doubled with the commencement of operation of the Pelton Dam project on the Deschutes river.

Placed on the line was the third hydroelectric generator of 36,000 kva which joins two similarly rated units which have gone into service during the last three months. The installation now has a generating capacity of 108,000 kilowatts.

The generators, manufactured by General Electric Company's Large Motor & Generator Department in Schenectady, N. Y., are located in an outdoor station adjacent to the concrete arch dam.

A 150-foot head of water pouring through penstocks turns the Francis type hydraulic turbines which operate the generators.

According to LM&G Dept. engineers, the ATI generators have rotors of 52 poles and are rated 138.5 rpm, 13,800 volts to generate three phase, 60 cycle electricity.

The Portland General Electric Company's system has a total generating capacity of 346,000 kw, of which 248,000 kilowatts are produced by water power.

The Transistor's Tenth Birthday

A MIGHTY mite, a miniature amplifier of revolutionary design, ushered in a new electronic age ten years ago when it was announced by Dr. Ralph Brown, director of Research for the Bell Laboratories.

The unusual device was the point-contact transistor and its origin resulted from the research work of three physicists—John Bardeen, Walter Brattain and William Shockley, all of whom were members of the Laboratories staff in 1948, and to the invention of the point-contact transistor by Brattain and Bardeen.

For this singular contribution to science, these three men were awarded the Nobel Prize in Physics for 1957.

The transistor is an amazing device. It provided new ways to build electronic circuits, made packaged and miniaturized components possible, uses minimal amounts of energy. It has been said that the transistor spanned in 10 years the development achieved by the electron tube in 40 years.

It has played an important part in the telephone industry, having applications in long distance routing, rural telephony, switching systems and many others.

Space satellites' transmitters were made possible by the transistor.

Hearing aids, radios, fuel injection systems, portable TV sets, phonographs, paging receivers, electronic instruments, computers, machine tooling controls, clocks, watches and many other articles have benefitted by this modern electronic miracle.

Transistor production for commercial use has jumped from 1.3 million units in 1954 to about 30 million units in 1957. And that output is expected to climb to the half-billion mark by 1965 with unit prices far lower than today's vacuum tubes.

Transistor Brain Monitors Power Plant

THE first transistorized general purpose digital computer, which will give an automatic record of operating conditions without the necessity of reading dials or recorders, is going "on line" at the new 210,000 kilowatt-unit at Sterlington Steam Station of Louisiana Power & Light Company according to Thomas Roy Jones, president of Daystrom, Incorporated.

Replacing the dials, gauges and recorders is a row of cabinets in which thousands of transistors and other equipment silently perform millions of mathematical operations without the heat or light of conventional vacuum tubes. This "solid state' construction is said to provide an unprecedented degree of reliability and availability making possible continuous, round-the-clock operation.

Developed and produced by the Daystrom Systems Division, La Jolla, Calif., the new Operational Information System was installed at the plant designed and constructed by Ebasco Services, Incorporated. The system handles 350 points at a rate of 5 points per second. Outputs are temperatures, flows, pressures, heat rates, and various electrical measurements.

"The Daystrom system not only performs all the mathematical computations on vital operating data being automatically observed and recorded, but supplies the necessary signals to control all elements of the automatic data collection equipment," Mr. Jones said. "Closer control of equipment, as well as completely accurate records for accounting and trouble-shooting will be the chief advantages of the system we have developed for Sterlington," he continued.

According to Louisiana Power and Light engineers, the Daystrom installation will automatically measure 25 temperature points, such as bearing and oil temperatures, boiler temperatures, steam temperatures, transformer temperatures and other temperatures important to plant operation. Should any of these temperatures register higher or lower than a preset point, an alarm will sound, and the reading will be printed out on a separate unit indicating its location in the plant. It will also print at regular time intervals 100 plant readings necessary for accounting and trouble-shooting records. At any time the operator desires, the unit will produce a written record of any of the measurements in the system.

Engineers at Louisiana Power & Light stated that the equipment was not installed to save man power. But primarily to provide operating experi-

e with the type of equipment that l eventually be used in the com- tely automatic power plant, the so- ed continuous computer scanner, re automatic equipment super- ed and controlled by the computer, l take over start-up, operation, and to own without any human super- ion.

rrosion in Utilities, Petroleum, Agriculture, Subjects of Field Tour

RROSION in the public utilities, roleum, refining, and agricultural ustries will be under examination l study on the Guided Field Cor- ion Tour sponsored by the San aquin Valley Section of National sociation of Corrosion Engineers. The tour will be held September 25, and will cover the Southern n Joaquin Valley area. Equipment l machinery to be exhibited will be ected so that case histories can be lowed on future tours. Wash tanks, lers, coated lines, sucker rods and er exhibits will be exposed for ready visual examination. A case history will also be available for each exhibit.

Further information may be obtained by writing Jerry Mitchell, Nocor Chemical Company, 3133 Monterey Street, Bakersfield, California.

High Wages Permit Market Invasion by Foreign Manufacturers

BARBED wire, which was first patented and manufactured in the United States, can now be imported from Dusseldorf, Germany, and sold for $40 a ton cheaper right in the same American town that is famous for making it. Chairman of the Board of U. S. Steel, Roger Blough, tells us why! The reason? Differences in wage scales. The German worker makes 1/3 of the wages obtained by the American worker for his services. Since labor costs account for the lion's share of the cost of any manufactured item, naturally the American-made product has to be sold for more. There was a time when technological know-how gave American industry the edge, enabling it to compete favorably despite big wage differentials that aided foreign competitors. But today foreign technology is catching up with U. S. manufacturers.

It's Mr. Blough's thinking that when foreign countries can produce the identical product that we can, duplicate the quality, and deliver it to our doorstep at far less than the price we must charge to make a profit, trouble looms on the horizon for American industry.

Blough, in a recent address to the Cleveland Chamber of Commerce, declared, "There is, I believe, an inexorable law which can never be defied, nor escaped, for long . . . it is a fundamental law of business and every business man knows it. That law is: 'Compete or die.'"

He pointed out that when we say American industry is pricing itself right out of the market, we actually mean that America, as a nation, is costing itself out of the market. And the barbed wire example is just one of many.

P.U.R. QUESTION SHEETS

With the least possible expenditure of time, effort and money, *utility executives, lawyers, accountants, engineers* and *others* interested in any *phase* of *public utility regulation* can keep well informed through these *brief, four-page* leaflets issued every two weeks.

They consist of 10 questions and 10 authoritative answers based on current decisions revealing court and commission views pro and con. Annual subscription $10.

Send your order to

Public Utilities Reports, Inc.,

332 Pennsylvania Building

Washington 4, D. C.

The unique informational program for utility employees . . .

The P.U.R. Guide

devoted to the economics of public utilities and to the many important, non-technic phases of utility operations.

It fulfills requirements for information concerning the basic economic problems of all utilities—electric, gas, telephone, transit and water.

This new and distinctively different approach to the educational needs of utility employees offers company managements an effective and reasonably-priced aid in the development of managerial personnel by providing fundamental, non-technical information specifically relating to matters of organization, financing, management, operation and regulation of public utilities.

IT'S EASILY UNDERSTANDABLE

The program comprises a systematically and consecutively arranged series of 50 weekly, 8-page GUIDES which present a simplified, progressive, step-by-step story, considered a "journey of understanding," about the nature of the utility business, its important place in the American economy, the present conditions under which the business is conducted, its day-to-day objectives and responsibilities, the existing problems with which it is confronted, and many other pertinent current subjects.

Voluntary examinations by mid-term and final questionnaires are embodied in the program. Upon satisfactory completion of the questionnaires, an appropriate certificate is issued. An index, glossary of industry terms and words, and suitable binder for the weekly GUIDES are also provided. Reprints of articles from Public Utilities Fortnightly giving more extended coverage of important subjects, are occasionally included for optional reading.

IT'S FLEXIBLE

THE P.U.R. GUIDE offers excellent opportunities for beneficial use by companies which adopt either the group-discussion or conference-type method of pursuing the program, or the home-study method. For companies which prefer the conference method, a Leader's Manual, with suitable binder, is available, without extra charge, to group or discussion leaders. The Manual contains additional background information on the subje considered in the weekly GUIDES to which t relate and also provides questions which may used to stimulate discussion and interest in c ferences.

For companies preferring the home-stu method, it should be noted that each wee GUIDE contains self-testing questions, wi answers furnished in the following GUIDE.

IT'S ACCEPTED

THE P.U.R. GUIDE in its first year of publica tion has met with very favorable acceptance, bei already in use by a great many compani throughout the country.

COMMENTS ABOUT THE P.U.R. GUIDE PROGRAM

Our Company is currently involved in several training programs, and I feel qualified to evaluate the information that you are sending out. I think this type of **material is, without a doubt, the very best** that could be obtained for key utility employees.

Director of Personnel, Electric Company

We are pleased we have had an opportunity to offer the course to our management people.

Employee Relations Department, Electric Company

We feel that even those who have been in the utility industry for many years **can learn much by just reading the material.**

District Manager, Electric Company

We all feel that this "information program for utility employees" is a program that is **needed in the public utility industry.**

Vice President, Gas Company

I am sure that the total series of 50 will prove of **inestimable value to the utility industry.**

Vice President and General Manager, Telephone Company

THE P.U.R. GUIDE program is the **best basic public utility information series** I have ever encountered.

Vice President, Gas Company

One group which is using THE P.U.R. GUIDE has been holding regular discussion meetings. We have found the **Leader's Manual helpful.**

Vice President, Gas Company

Two things have particularly impressed me about THE P.U.R. GUIDE. First, is the **complete manner** in which your editors treat the various topics; second, the **simplicity in writing.**

Employment Supervisor, Gas Company

There is a **definite need** for such a type program in our industry.

Training Assistant, Electric & Gas Company

OUTLINE OF SUBJECT COVERAGE *Basic Understanding Series*

GUIDE NO.

1. Starting a Utility Business
2. The American Economy
3. What is a Public Utility?
4. The What and How of Regulation
5. The Pattern of Federal Regulation
6. The Regulation of Rates
7. What is Value?
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